SECTION 5 ENVIRONMENTAL INFORMATION

5.7 CULTURAL RESOURCES

This section analyzes the potential impacts the Project may have on previously or newly recorded cultural resources located within the Area of Potential Effect (APE). Cultural resources include prehistoric resources; historic buildings, structures, objects, districts, and archaeological sites; and sites and resources of concern to Native American and other ethnic groups. The complete results of the Class III Intensive Field Survey are found in Appendix Z-Confidential Technical Report.

The cultural resources assessment prepared for the Project includes: a description of the Project area and affected environment; existing site conditions; a summary of the prehistory, ethnography, history of the region; a review of site records for previously completed cultural resource investigations and recorded sites in the APE and within a 1-mile study area surrounding the Project area; results of the archaeological and historic architecture pedestrian surveys of the APE; Native American consultation; environmental consequences; cumulative effects; mitigation measures; compliance with LORS; agencies and agency contacts; permits required and permitting schedule and references. Complete documentation of the cultural resources assessment is appended in the archaeological survey report (refer to Appendix Z Confidential Technical Report and Appendices).

The Solar One Class III Survey began late July 2008, preliminary background research was conducted prior to fieldwork. An intensive pedestrian survey of the Solar One APE was carried out between August 4 and October 31, 2008. The Built Environment assessment was conducted by Historian, Kirsten Erickson, who conducted background research on August 20 through 22, and October 29 and 30, 2008, and field Surveys on August 19 and October 27 and 28, 2008. The Class III Intensive Field Survey covered 8,230 acres.

The results of this study indicate that the Project may have adverse effects to cultural resources within the Project APE, although management measures have been provided that will avoid and/or mitigate adverse effects to cultural resources that are determine eligible for listing in the National Register of Historic Places (NRHP) and/or the California Register of Historical Resources (CRHR) Management include further evaluation of resources lacking sufficient data to assess eligibility. Following proper implementation and application of the Management and Mitigation Plan provided effects on cultural resources will be reduced to a level of less than significant:

1) Avoidance of eligible resources, if avoidance is not feasible further evaluation is required (proceed to step 2).

2) Implementation of the Further Evaluation/Testing Plan provided in this section will determine if the resource is eligible and/or significant for NRHP and/or CRHR. If the resource is determined not eligible under NRHP and CRHR criteria after evaluation, there is No effect. If the resource is determined eligible after further evaluation, avoidance is recommended, if avoidance is not feasible a data recovery plan will be required (proceed to step 3).

3) Develop a Research Design and implement a Data Recovery Mitigation Plan.

4) Cultural Resource Monitoring Plan has been provided to address unanticipated findings during ground disturbing activities. In the event that eligible and/or significant cultural resources are discovered while monitoring the resource must be evaluated and a significance/eligibility determination made. This will require steps 2 and if determined ineligible will be No Effect, if determined eligible step 3 is required.

For the purposes of discussing Project related effects, the discussion is divided by Phase I, Phase II, Pisgah Substation Triangle Area, Access Road Corridors and Bridge Crossing, 200-Foot Archaeological Buffer, and ½-Mile Built Environment Buffer (see Figure 5.7-1). There are three Not a Part (NAP) areas within the Solar One APE. These sections are private property, in which only limited Right of Entry (ROE) has been granted. The parcels in which ROE has been granted and resources are disclosed can be found Confidential Appendix Z-Confidential Appendix A- Maps/Figures. Those sections in which ROE has not been granted do not contain a 200 foot archaeological buffer. Information regarding cultural resources and buffer zone will be provided as ROE is granted in addendums to this document.

A total of 383 archaeological cultural resources have been identified within the Solar One APE and 200 foot archaeological buffer, of those 242 are isolated findings, and 141 are archaeological sites. Of the 141 archaeological sites 16 occur in Phase I; 106 occur in Phase II; 7 occur in the Pisgah Substation Triangle survey area, 8 occur in access road corridors and bridge crossing, and 4 of these only occur in the Solar One 200-foot archaeological buffer.

Of these 141 archaeological sites, 108 need further evaluation to determine eligibility for the National Register of Historic Places (NRHP) under criterion: (d) Resources that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4). As well as the California Register of Historical Resources as potentially significant; it has yielded or is likely to yield information important to prehistory or history (Section 15064.5). The remaining 33 archaeological sites are determined not eligible under NRHP and/or CRHR. A total of 242 isolate archaeological findings occur with the Project APE and 200 foot archaeological buffer. Isolate findings are typically not eligible because such lack context and research potential. Therefore the 242 isolates and 33 archaeological sites determined ineligible for listing in the NRHP and/or CRHR are determined to have No effect.

Based on the Solar One Plan of Development for this project, 108 sites require evaluation of eligibility as they will be subject to direct impact from construction activities associated with the development of the Project. Of these, 100 are prehistoric, 5 are historic, and 3 are multi-component archaeological sites.

The built environment assessment identified 10 historic resources, 2 of which were previously recorded and evaluated under NRHP and CRHP; of these one has been previously evaluated and determined not eligible. Of the 10 built environment resources, 2 resources are eligible and should be avoided. These include newly recorded 220 KV Transmission Line and the existing Route 66. Route 66 is not within the Solar One APE, but is within the ½-mile buffer. The railroad, historically referred to as Atchison, Topeka, and Santa Fe (CA-SBR-6693H) has been previously recorded and evaluated and determined ineligible with a status code of 6Y. Route 66 (CA-SBR-2910H) has been determined eligible for listing on the NRHP and is listed on CRHR. Public Law 106-45 serves to protect and preserve this resource. The 220 KV Transmission Line

newly identified are considered eligible under NRHP criterion A and CRHR criterion 1 The remaining 7 newly recorded built environment resources are not considered eligible for NRHP and CRHR. Because many of the resources are linear, they are located in two or more of the surveyed areas. Of the total, 1 occurs in Phase I; 4 occur in Phase II, 7 occur in the Pisgah Triangle, 3 occur within proposed access road corridors and bridge crossing, and 7 occur in the ½-mile buffer.

Indirect impacts to resources is also evaluated in this section, which include impacts to natural setting, view shed, as well as the increased traffic/activity in the Project APE that may lead to unauthorized collecting of artifacts in and around the Project APE. The Management/Mitigation Plan provided, if implemented properly will ultimately determine that this Project will have No Indirect Effect on cultural resources within the Solar One APE and Buffers.

All cultural resources work for the Project was carried out under the direct supervision of an archaeologist who meets the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation Professional Qualification Standards (36 Code of Federal Regulations (CFR) Part 61, - refer to Appendix Z Confidential Technical Report and Appendices). The Class III Intensive Field Survey was done in accordance with the Warren-Alquist State Energy Resources Conservation and Development Act, Public Resources Code (PRC), Section 25000 *et seq.*; Instructions to the California Energy Commission (CEC) Staff for the Review of and Information Requirements for an Application for Certification (CEC 1992); Regulations Pertaining to the Rules of Practice and Procedure and Power Plant Site Certification (CEC 2007); and Rules of Practice and Procedure and Power Plant Site Regulations Revisions (CEC 2007). Additionally, this study was done in accordance with the California Environmental Quality Act (CEQA), PRC Section 21000 *et seq.*, and the California Code of Regulations (CCR) Title 14, Chapter 3, Section 15000.

5.7.5.1 Project Area

The Project is located in the Central Mojave Desert, in an undeveloped area of Eastern San Bernardino County, California. The Project is located approximately 37 miles east of Barstow (Figure 1-1 Appendix Z – Confidential Technical Report). The Project is located primarily on land managed by BLM, Barstow Field Office. The Solar One APE consists of approximately 8,230 acres and is found on the Hector, Lavic Lake, Sleeping Beauty, Sunshine Peak, and Troy Lake 1983 Provisional United States Geological Survey (USGS) 7.5-minute series quadrangle maps (S.B.B.M) (Figure 1.1-1 Appendix Z Confidential Technical Report).

The Project is an irregular shaped area north of Interstate 40 (I-40) and primarily east of Hector Road. The southern Project boundary borders I-40; the Burlington Northern and Santa Fe (BNSF) Railroad Right of Way (ROW) bisects the northern and southern portions of the Solar One APE; the western Project boundary borders the proposed Solar Three; the southeastern boundary borders the transmission line, the eastern boundary is within the Cady Mountain Range, and the northern Project boundary borders the base of the Cady Mountains. The triangular parcel encompassing the Pisgah Substation and immediately surrounding area is also included in the APE, as well as the eastern temporary I-40 access ramp and other ancillary temporary access routes.

The area where the Project would be constructed is primarily within Bureau of Land Management (BLM), open undeveloped land within the Central Mojave Desert. The Cady Mountain Wilderness Study Area (WSA) is located north of the Solar One site. The Pisgah Crater, located within the Pisgah Area of Critical Environmental Concern (ACEC), is located south of the Project. Several underground and above ground utilities traverse the APE.

An on-site substation (i.e., Solar One Substation [covering approximately 3 acres]) will be constructed to deliver the electrical power generated by the Project to the SCE Pisgah Substation. Approximately twelve to fifteen 220kV transmission line structures (90 to 110 feet tall) would be required to make the interconnection from the Solar One Substation to the SCE Pisgah Substation. All of these structures would be constructed within the Project footprint. (Appendix Z – Confidential Technical Report / Figure 1-1, Project APE).

The Project will include a centrally located Main Services Complex (encompassing approximately 22.6 acres) that includes three SunCatcher assembly buildings, administrative offices, operations control room, maintenance facilities, and a water treatment complex including: a water treatment structure, raw water storage tank, demineralized water storage tank, basins, and potable water tank.

Adjacent to the Main Services Complex, a 14-acre temporary construction laydown area will be developed and an approximately 6-acre construction laydown area will be provided adjacent to the Satellite Services Complex south of the BNSF railroad. Two additional construction laydown areas (26 acres each) one will be located at the south entrance off Hector Road and the other at the east entrance just north of the SCE Pisgah Substation.

Temporary construction site access would be provided off of I-40 beginning east of the Lugo-Pisgah Transmission Line corridor and would run approximately 3.5 miles across the Pisgah ACEC requiring an approximate 30-foot ROW. Long-term permanent access would be provided by a bridge over the BSNF railroad along Hector Road north of I-40. Equipment may be transported during construction via trucks and/or railroad (through the construction of a siding), that would be located on the north side of BNSF railroad and east of Hector Road.

Water would be provided via a groundwater well located on a portion of the BLM Right of Way (ROW) grant in Section 12, southwest of the Main Services Complex, and transported through an underground pipeline. The expected average well water consumption for the Project during construction is approximately 50 acre-feet per year during the approximate four-year construction period. Under normal operation (inclusive of mirror cleaning, dust control, and potable water usage), water required will be approximately 36.2 acre-feet per year. Emergency water may be trucked in from local municipalities. When possible, the Project has been designed to minimize water use and maximizes the recovery of processed potable water.

5.7.5.2 Area of Potential Effects

The APE includes three different buffers: archaeological Project footprint, archaeological access route corridors, and built environment. The archaeological APE includes the Project footprint and an additional 200 feet buffer. Ancillary access corridors outside the Project footprint include the access route width and an additional 50-foot buffer on either side. The historic architecture APE includes the Project footprint, access corridors and an additional ½ mile buffer. The

delineation of both the archaeological and built environment APEs were completed in accordance with BLM Manual 8100, in accordance with BLM Barstow Field Office requirements per BLM Archaeologist Jim Shearer and the CEC Rules of Practice and Procedure and Power Plant Site Regulations Revisions, Appendix B (g)(2)(C) (CEC, 2007a).

5.7.5.3 Physiography

The Project Area is located along the southern foothills of the Cady Mountains in the central Mojave Desert, San Bernardino County, California. The Cady Mountains border the Solar One northern and eastern boundaries. The surrounding mountains are primarily volcanic in origin. Cady Peak is approximately four miles north east of the Project Area and Sleeping Beauty Mountain is five miles to the east.

The Project Area is in an arid desert within a wide valley along an alluvial fan dissected by numerous unnamed washes and ephemeral drainages trending towards the south-southwest. No springs are indicated on the USGS quad maps for the Project Area, although three wells sites do occur on the USGS quad maps and were observed during the pedestrian survey. The well located in southwestern quarter of Section 1 of Township 8 North, Range 5 West (Hector quad) has water present. The nearest reliable water beyond the Project Area occurs to the west approximately 12 miles to the west of the APE in the Mojave Valley. The Mojave Valley has numerous springs and wells that surround the dry lake bed of ancient Troy Lake. However, water is seasonally available in the form of rain swollen drainages as indicated by numerous washes originating in the Cady Mountains and off-site to the east. A substantial east to west drainage crosses the southern portion of the Project Area, eventually emptying into Troy Lake. The presence of water in the drainages and the lakes was certainly greater during the terminal Pleistocene and early Holocene.

5.7.5.4 Soils and Geology

The Project area lies in a broad valley between the Southwestern and Southeastern Cady mountains in the central portion of the Mojave Desert Geomorphic Province. The Mojave Desert Geomorphic Province is characterized by broad expanses of desert with localized mountains and dry lakebeds. The province is bound by the San Bernardino Mountains and the Pinto fault to the south, the San Andreas fault to the west, the Garlock fault to the north and the Basin and Range Province to the east.

The Mohave Desert Geomorphic Province, as described above, is a wedge shaped area largely bound by major faults and structurally referred to as the Mohave Block. The Mohave Block is cut by a series of northwest to southeast striking faults including the Helendale, Lenwood, Johnson Valley, Camp Rock, Emerson, Calico, Pisgah, Bullion, and Lavic Lake faults. Collectively, the strike slip faults in the Mohave Block are referred to as the Eastern California Shear Zone (ECSZ).

The Project area is characterized by Holocene-age and Pleistocene-age alluvial deposition. Alluvial deposits off of the adjacent highlands are composed of silty sands and gravels with localized gravel and cobble channels. These sandy alluvial deposits may be locally intertwined with finer-grained basin deposits. The bounding highlands, which include a small portion along

the northern Project boundary, are underlain by granitic and metamorphic terrain and along the southern edge by younger volcanic deposits.

5.7.5.5 Geomorphology

The deposition history is dominated by older (Pleistocene) and younger (Holocene) fanglomerates consisting of sands and gravels flowing in a generally southern direction derived from the uplifted granitic and andesitic Cady Mountains (Dibblee and Bassett, 1966). The older alluvium dominates the upper reaches of the fanglomerate, whereas the younger deposits dominate the lower reaches of the slope. This younger alluvium includes materials associated with a substantial east to west drainage that crosses the southern portion of the Project. Although limited data is available, field observations indicate substantial depth to the fanglomerate deposits. Older fanglomerates and alluvium form low hills is the southern-most extent of the Project footprint separated from the remainder of the Project by the drainage noted above. These hills and a northward extension of the Pisgah lava flow channel the drainage towards Troy Lake to the west of the Project.

The occurrence of desert pavements within the Project APE reflects the context presented above. In particular, the pavements on the slopes of the Cady Mountains are broader and better developed atop the older, up-slope Pleistocene fanglomerates than on the younger surfaces at lower elevations. The older surfaces, and likely the younger ones as well, predate the accepted presence of man in the new world. However, the most stable pavements, and likely the oldest, lie atop Quaternary alluvium woven among the fanglomerate hills and lava flows within the southern portion of the Project. Buried deposits would not be found beneath these stable surfaces. The cryptocrystalline silicate nodules that occur as part of the desert pavement matrix may be secondarily sourced to the fanglomerate deposits, though their original matrix remains unknown.

Holocene alluvial deposits within and adjacent to the east-west drainage are the most likely source for buried deposits. Archaeological deposits identified along this drainage contain a greater variety of artifact types including groundstone and other indications of at least temporary encampment. The loose sandy matrix and the seasonal rain and flood events are likely to have obscured portions of these deposits (Figure 6.3-1 Appendix Z Confidential Technical Report - Confidential Appendix A – Maps and Figures).

5.7.5.6 Biology

California's diverse environment is separated into ten different bioregions. The Project Area lies within the Mojave Bioregion. The Mojave Bioregion is an arid desert environment which covers over 25 million acres of Southern California, Southern Nevada, and the Southwestern Utah and is characterized by desert washes, high plateaus, peaks, palm oases, and large dry prehistoric lake beds called playas. These playas usually consist of sand and gravel basins surrounding central salt flats and were formed by pluvial lakes which once dominated the Mojave Bioregion. The Mojave is bordered on the north by the Sierra Nevada Bioregion, on the west by the Transverse and Peninsular ranges and is separated from the Great Basin, on the east, by the Garlock Fault (Moratto 1984:16, 17). Elevations in the bioregion average between 2,000 to 3,000 feet above sea level and contain isolated peaks of 6,000 to 7,000 feet above sea level.

Although the desert appears barren and remote, it contains a large variety of plant and animal life. Vegetation in the Mojave Bioregion includes Mojave creosote bush, scattered desert saltbush, Joshua tree scrub, alkali scrub, juniper pinyon woodland, numerous varieties of cacti, and hardwood and conifer forests in the higher elevations. Rare plants in the bioregion include white bear poppy, Barstow woolly sunflower, alkali mariposa lily, Red Rock poppy, Mojave monkey flower, and Stephen's beartongue. (Ceres, n.d.). The Mojave Bioregion is characterized by hot dry summers followed by cool winters with occasional rainstorms that often develop into flash floods. Much of the land within the Mojave Bioregion is owned and managed by the BLM or contained in one of the three national parks, Death Valley, Eastern Mojave, and Joshua Tree and several other recreational areas (Ceres, n.d.).

5.7.5.7 Existing Conditions

The Project Area is located north of I-40, at Hector Road. The BNSF Railroad tracks bisect the northern and southern portions of the Project APE. Historic Route 66 roughly follows the same route as I-40 though they are discrete within the Project APE. A series of underground pipelines occur within the Solar One (Phase II) APE south of the railroad tracks. Four series of transmission towers occur along the eastern-southeastern Project APE. These series include: a pair of historic steel tower transmission, a wooden transmission line, and a modern transmission tower. The Pisgah Substation triangular shaped parcel and I-40 temporary access route is included in the Solar One APE. Two radio facilities are located within the vicinity of the Project Area, one is situated to the southwest and the other to the east-northeast of the Project.

The city of Barstow is 37 miles west of the Project Area. The Project Area is situated between two small towns, Newberry Springs to the west and Ludlow to the east, both of which are approximately 12 miles from the Hector Road exit. Historic mines occur throughout the region, and include Black Butte Mine to the east, Pisgah Mine to the south, and Logan Mine to the north; both Logan and Black Butte are within one mile of the Project. The historic mines consist of open mines, borrow pits, and open pit mines. The Pisgah crater is approximately 4.5 miles south-southeast of the Pisgah Substation, which is located at the southeast corner of the Project APE.

The Project Area is distinctively rural in nature, and the landscape's environs are characterized by cattle ranching activities (e.g., grazing, rangeland), historic mining, and historic and modern railroad activities. The majority of the Project Area is relatively undisturbed and the landscape/topography generally resembles its natural environment. The only standing, intact structure is the Pisgah Substation within the APE; the only other structural ruins observed were dilapidated mining related facilities, mining processing equipment, corrals, water tanks, barbed wire fencing, and historic transmission poles, and transmission line corridors.

5.7.5.8 Site Disturbance within the Project Area and APEs

The primary sources of the previous surface and subsurface disturbance in and adjacent to the Project Area are, in no specific order, related to:

- cattle grazing,
- off-road vehicle use,

- mining in the Project area,
- pipeline construction,
- electrical utilities,
- railroad, and
- road construction.

5.7.6 Prehistoric Context

The chronological sequence of the cultural complexes for the Mojave Desert initially proposed by Warren (1980, 1984) and Warren and Crabtree (1986) divides the prehistoric era into five temporal periods: Lake Mojave, Pinto, Gypsum, Saratoga Springs, and Shoshonean. The Shoshonean includes the ethnographic era, while the four earlier periods encompass the Archaic of the Great Basin and, in the Saratoga Springs period, formative influences from the Southwest (Lyneis 1982). Claims have been made for archaeological assemblages dating to periods earlier than Lake Mojave, but as Warren and Crabtree (1986) note, all are controversial and, even if valid have little or no relationship to later cultural developments in the region.

The Mojave Desert sequence has recently been expanded upon by Sutton et. al (2007) to include elements more closely aligned to prehistoric cultural complexes in the Central Mojave Desert. Similar to Warren and Crabtree (1986), Sutton et. al (2007) notes little evidence of a "Pre-Clovis" occupation during the Pleistocene for the Mojave Desert, but does not discount the possibility of such existing in the region. In contrast to the earlier sequence, Pleistocene era occupation is identified and termed the hypothetical "Pre-Clovis" and "Paleo-Indian" Complexes. Other elements of the Sutton et al. (2007) Mojave Desert chronology for the Holocene period include the Lake Mojave complex, Pinto complex, Dead Man Lake complex, Gypsum complex, Rose Spring complex, and Late Prehistoric complex, as described below. As use herein, "climactic periods (e.g., Early Holocene) [refers] to specific spans of calendric time and cultural complexes (e.g., Lake Mojave Complex) to denote specific archaeological manifestations that existed during (and across) those periods" (Sutton et al. 2007).

5.7.6.1 Paleo-Indian Complex (10,000 to 8000 cal B.C.)

The Paleo-Indian Complex was an era of environmental transition between the late Pleistocene and early Holocene. The beginning of the Paleo-Indian Complex was characterized by increased rainfall and cooler temperatures, which formed deep lakes and marshes, even in the interior desert regions of California. As temperatures warmed at the start of the Holocene, glaciers slowly retreated, sea levels rose, and the interior lakes and marshes gradually evaporated over the millennia (Moratto, 1984:78).

The earliest, clear evidence for human occupation of the Mojave Desert begins at about 12,000 years ago, while claims for earlier, pre-Holocene era occupations such as those made for the Calico Early Man site (Duvall and Venner 1979), Tule Springs (Harrington and Simpson 1961), Lake China (Davis 1978), and Lake Manix (Simpson 1958, 1960, 1961) remain unsubstantiated.

In 1926, a fluted point found in Folsom, New Mexico transformed the debate about the antiquity of the earliest inhabitants of the New World pushing the date back to approximately 15,000 B.P. Since this finding many other sites containing this type of point have been identified throughout the United States. Many of these sites contain variations of the fluted point tradition including the Clovis.

The Paleo-Indian Complex within the Mojave Desert is, thus far, represented exclusively by the Clovis Complex, though the relationship with the later Great Basin stemmed series points is also a consideration. The Paleo-Indian Complex experienced profound environmental changes, as cool, moist conditions of the terminal Wisconsin glacial age gave way to a warmer, drier climate of the Holocene (Spaulding 1990).

The China Lake site remains the only presumed occupation for the Paleo-Indian complex in the Mojave Desert for the late Pleistocene Period. China Lake is located near an ancient Pleistocene lake and excavations of this site began in 1968 and lasted through the end of the 1970s (Moratto 1984:66-70). China Lake has a well-sealed stratigraphic context with prehistoric tools intermixed with the fossilized remains of extinct mammals. The tool sequence from the site suggests that China Lake was inhabited from as early as 9,200 cal. B.C. (Sutton et al., 2007: 234). The earliest calibrated dates for China Lake are from habitation debris at the Pleistocene lakeshore that continued through 10,000 BP, where Proto-Clovis and Clovis cultures were identified. Nearly all of the tools identified at this site were produced from obsidian and fine-grained cryptocrystalline silicates (cherts and jaspers).

One common current theme among nearly all Paleo-Indian sites in North America is the tool assemblage: projectile points, hafted to the end of a spear and launched using a throwing tool (atlatl), were made from fine-grained lithic material and fluted. Fluted points, defined as a component of the Clovis culture in California, have been found nearly throughout the entire state from coastal estuary environments to ancient Pleistocene lakeshores, which are now in desert areas. At least five sites near Cajon Pass have been identified containing fluted projectile points, suggesting an early occupation of approximately 12,000 BP which corresponds to the "hypothetical Pre-Clovis" complex (pre-10,000 cal B.C) for San Bernardino County (Sutton et al, 2007:236). In addition to fluted points, the Paleo-Indian tool assemblage was composed mainly of scrapers, burins, awls, and choppers, all made from lithic material and used for the processing of animal remains and foodstuffs.

In addition to the tool assemblage as a key marker for Paleo-Indian site characterization, the Pleistocene to Holocene geological period of transition, approximately 14,000 to 8,000 BP, was a period of global climatic change and in California interior, some lakes formed from glacial melt (Roberts 1989). This has led some early researchers to pose the theory of two different traditions relating to interior and coastal adaptation. Based on his work in the Panamint Valley, Davis (1969) posited the theory of "Paleo-Desert," a geographic distinction from Paleo-Indian sites of the "Paleo-Coastal" tradition. In the Paleo-Desert geographic region, Paleo-Indian sites are generally located along the shorelines of ancient pluvial lakes (Davis 1969).

5.7.6.2 The Pinto Complex (ca. 6500 – 4000 cal B.C.)

The Pinto Complex represents a transition from big game hunting to a more broadly based economy (Sutton 1996: 231). Climatic changes occur between the Early and Middle Holocene

periods about 7,500 B.P and 5,000 B.P. appears to have been more arid across the Mojave region (S. Hall 1985; Spaulding 1991). It is during this time that woodland attained its approximate modern elevation range, and the modernization of desert scrub communities was completed with the immigration of such plant species as creosote bush into the area. Warren (1984) sees this period as marking the beginnings of cultural adaptation to the desert, as materials characteristic of the Pinto Complex gradually replace those of the preceding Lake Mojave Complex. Sites associated with this era are usually found in open settings, in relatively well-watered locales representing isolated oases of high productivity.

From the period 5,000 BP to 3,500 BP, there was an increased occupation of the desert regions during the Medithermal Climatic Period, a period of moister and cooler temperatures allowing for the intensive re-occupation of the desert region. In the desert region, the occupation is referred to as the Pinto Basin Complex. However, Sutton et al. (2007: 238) cite recent work conducted on Fort Irwin and Twentynine Palms military base that produced radiocarbon dates as 6,870 cal B.C., thus pushing the back the inception of the complex coincidental with the Lake Mojave Complex.

The Pinto Complex is marked by the appearance of Pinto series projectile points, characterized as thick, shouldered, expanding stem points with concave bases, as well as, bifacial and unifacial core tools, and an increase in millingstones. Pinto points were typically produced by percussion reduction, with limited pressure retouch. Named for the Pinto Basin site (Campbell and Campbell 1935), the points were presumably used on atlatl darts. Large numbers of such artifacts were also recovered from the Stahl site near Little Lake (Harrington 1957; Schroth 1994).

Major technological shifts for this Complex include a significant increase in the use of millingstones (Warren and Crabtree 1986). Warren (1990) attributes the latter development to the exploitation of hard seeds; part of a process of subsistence diversification brought on by increased aridity and reduced ecosystem carrying capacity. Big game hunting probably continued as an important focus during this time, but the economic return of this activity likely decreased as mountain sheep and deer (artiodactyls) populations declined in response to increased aridity (Warren and Crabtree 1986). During this transitional period there is faunal evidence that indicates the exploitation of rabbit, rodent, reptile, and fresh water mussel resources.

The majority of Pinto Complex archaeological sites have been found near pluvial lakes, adjacent to fossil stream channels, near springs, and in upland regions. Many of these sites contain substantial midden deposition and cultural debris, which indicates larger groups and prolonged occupation for this time period (Sutton et. al, 2007: 238).

A new complex has been proposed by Sutton et. al. (2007); the Dead Man Lake Complex (7,000-3,000 cal. B.C.) is based on archaeological findings from the Twenty-Nine Palms area. The Dead Man Complex appears to be a variation of the Pinto Complex. The primary variation in the Dead Man Complex is the presence of small to medium sized contracting stemmed or lozenge shaped points, battered cobbles, bifaces, simple flaked tools, milling implements, and shell beads (Sutton et. al. 2007: 239).

Based on the current archaeological data there appears to be a gap between the Middle and Late Holocene period. It is believed that climatic changes during this period for the Mojave Desert created hotter drier condition, which may have led to the abandonment of this region for approximately 1,000 years (Sutton et. al., 2007: 241).

5.7.6.3 Lake Mojave Complex (ca. 8000 – 6500 cal B.C.)

The temporal period 8000 to 6500 cal B.C. is referred to as the Altithermal Climatic Phase in which there was a dramatic shift towards a much warmer environment in the desert regions, which witnessed a near hiatus in the occupation of the Mojave Desert. It seems that during this time the occupants living in the desert regions migrated towards the coastal region. The change in the climate affected the distribution of floral and faunal communities and correspondingly people migrated toward the coast to exploit littoral resources. A smaller frequency of ground stone implements is present during this time, from which is inferred a reduction in hard seed grinding activities (Sutton et. al, 2007: 237). The high incidence of extralocal materials and marine shell is interpreted as wider spheres of interaction than witnessed previously. Sutton et al. (2007: 237) interprets these and other data as indicators of "a forager-like strategy organized around relatively small social units."

Cultural materials dating from this Complex encompass the Playa and Malpais cultures (Rogers 1939), the San Dieguito Complex (Warren 1967), and the Lake Mojave Complex (Warren and Crabtree 1986). This phase is considered ancestral to the Early Archaic cultures of the Pinto Complex, representing a shift toward a more diversified and generalized economy (Sutton 1996:228). The Lake Mojave assemblages, first identified at Lake Mojave (Campbell et al. 1937), include Lake Mojave series projectile points (leaf-shaped, long stemmed points with narrow shoulders) and Silver Lake points (short bladed, stemmed point with distinct shoulders). Other diagnostic items include flaked stone crescents; abundant bifaces; and a variety of large, well-made scrapers, gravers, perforators, heavy core tools, and ground stone implements (Sutton et al, 2007: 234).

Millingstones are generally absent in the archaeological record of this time. In the Mojave Desert and southern Great Basin, this assemblage is typically (but not exclusively) found around the margins of ancient lakes, although the role of the lakes in the overall adaptation remains unclear. According to Sutton (1996: 229), Lake Mojave Complex sites occur more commonly in the eastern and central Mojave Desert, while rare occurrences have been noted within the western Mojave in the Lake China, Coso, and Owens Lake areas (Brian Glenn, personal communication, 2008).

The Lake Mojave cultural pattern seems to represent relatively small nomadic social units centered on foraging strategies with undefined hunting and lacustrine resource exploitation patterns. Studies conducted in Fort Irwin show a reliance on smaller taxa with less reliance on large game based on protein residue analysis, although these data are contradictory to the cultural constituents recorded for this complex that suggest large game exploitation (Sutton et al, 2007: 237). The Lake Mojave Complex and Pinto Complex have an overlap of approximately 1,000 years, in which continuity of technology occurs with a steady introduction of technologies referred to as the Pinto Complex.

5.7.6.4 Gypsum Complex (ca. 2000 cal B.C. – cal. A.C. 200)

Gradual amelioration of the climate began by around 5,000 B.P, culminating in the Neoglaciation at about 3,600 B.P., and a period of increased moisture dating to the latter part of the Middle Holocene (Spaulding 1995). In the early part of the Late Holocene period there was

an increase in moisture that would have presumably resulted in favorable conditions in the desert, and may have influenced changes in cultural adaptations, including increasing population, trade, and social complexity (Sutton 1996: 232; Sutton et. al., 2007: 241).

Gypsum Complex sites are characterized by medium to large stemmed and corner notched projectile points, including Elko series, Humboldt Concave Base, and Gypsum. In addition, rectangular-based knives, flake scrapers, occasional large scraper planes, choppers and hammerstones; handstones and milling tools become relatively commonplace and the mortar and pestle appear for the first time.

This Complex is marked by population increases and broadening economic activities as technological adaptation to the desert environment evolved. Hunting continued to be an important subsistence focus, but the processing of plant foods took on greater importance as evidenced by an increase in the frequency and diversity of ground stone artifacts. Later, the bow and arrow were introduced, increasing hunting efficiency. Perhaps due to these new adaptive mechanisms, the increase in aridity during the late Gypsum Complex (after ca. 2,500 B.P.) seems to have had relatively little consequence on the distribution and increase in human populations (Warren 1984; Warren and Crabtree 1986). In addition to open sites, the use of rockshelters appears to have increased at this time. Base camps with extensive midden development are a prominent site type in well-watered valleys and near concentrated subsistence resources (Warren and Crabtree 1986). Additionally, evidence of ritualistic behavior is evident during this time though the presence of rock art, quartz crystals, and paint (Sutton et. al., 2007: 241).

A shift in subsistence orientation and mobility near the end of the Gypsum Complex is suggested, with decreased residential mobility and increased emphasis on the hunting of smaller mammals (Basgall et al. 1986; Sutton 1996:234). Rock art suggests that the hunting of mountain sheep was important during the Gypsum Complex (Grant et al. 1968); mountain sheep and deer, rabbits and hares, rodents, and reptiles remains are reported from Gypsum Complex sites in the central Mojave Desert (Hall and Basgall 1994). Evidence from the western Mojave Desert suggests that there was a major population increase ca. 3,000 to 2,300 B.P (Gilreath and Hildebrandt 1991; Sutton 1988).

5.7.6.5 Rose Springs Complex (ca. cal A.D. 200 – 1100)

The climate during the Rose Springs Complex remains relatively stable and consistent during the middle of the Late Holocene period. In the western Mojave Desert some regions show an increase in high point for lake stands, such as Koehn Lake, during this time (Sutton et. al., 2007: 241). At the beginning of this geological period lakes were at high points, as the environment once again began to shift towards the end of this period, lakes began to desiccate and recede, which marks the end of the Rose Springs Complex around 1,000 B.P.

The Rose Springs Complex is characterized by small projectile points such as the Eastgate and Rose Spring series, stone knives, drills, pipes, bone awls; various milling implements, marine shell ornaments, and obsidian are prevalent during this time (Sutton et. al., 2007: 241). The smaller projectile points appear to mark the introduction of a bow and arrow technology and the decline of the atlatl and spear weaponry (Sutton 1996: 235). Sutton (1996: 235; 2007: 241) notes that Rose Spring Complex sites are common in the Mojave Desert and are often found near springs, washes, and lakeshores.

Subsistence practices during the Rose Spring Complex appear to have shifted to the exploitation of medium and small game, including rabbits/hares and rodents, with a decreased emphasis on large game. At the Rose Spring archaeological site, numerous bedrock milling features, including mortar cups and slicks, are associated with rich midden deposits, indicating that milling of plant foods had become an important activity. In addition, evidence of permanent living structures are found during this time and include wickiups, pit houses, and other types of structures (Sutton et al., 2007:241). Within the eastern Mojave Desert, agriculture was practiced during the Rose Spring Complex and into the subsequent Late Prehistoric Complexes.

5.7.6.6 The Late Prehistoric Complexes (ca. cal A.D. 1100 – Contact)

Paleoenvironmental studies conducted within the western Mojave Desert point to increased effective moisture beginning just after 2,000 B.P., as evidenced by a shoreline bench feature at Koehn Lake (Sutton 1996: 238). The Koehn Lake site appears to have been abandoned by 1,000 years ago, at the time Koehn Lake desiccated during a major "medieval drought." This drought in the western portion of the desert may have influenced the movement of people from this area north and east across the Great Basin (Sutton 1996: 239). During this time population begins to decrease, due to drier a climate, and later as a result of European contact.

Characteristic artifacts of this Complex include Desert series projectile points (Desert Side-notched and Cottonwood Triangular), Brownware ceramics, Lower Colorado Buff Ware, unshaped handstones and millingstones, incised stones, mortars, pestles, and shell beads (Warren and Crabtree 1986). The faunal assemblages typically contain deer, rabbits/hares, reptile, and rodents. The use of obsidian dropped off during this time with the increased use of cryptocrystalline silicates.

Between 1,000 and 750 years ago, ethnic and linguistic patterns within the Mojave Desert increased in complexity. One of the most important regional developments during the Late Prehistoric Complexes was the apparent expansion of Numic-speakers (Shoshonean groups) throughout most of the Great Basin. Many researchers accept the idea that sometime around A.D. 1000 the Numa spread eastward from a homeland in the southwestern Great Basin, possibly from Death Valley (Lamb 1958) or Owens Valley (Bettinger and Baumhoff 1982). While there is little dispute that the Numic spread occurred, there is much disagreement over its mechanics and timing (see Madsen and Rhode 1995).

The Late Prehistoric Complexes mark the first recorded historical documentation of Native American inhabitants at European contact. The ethnohistoric record provides a valuable resource for understanding Late Prehistoric archaeology. The Late Prehistoric Complexes reveal a significantly different suite of material culture than that seen in earlier Complex assemblages. Manos and millingstones became more frequent, as did mortar and pestles. In addition bow and arrow technology with the use of Desert Side-notched and Cottonwood points, both emerge during the Late Prehistoric Complexes. Large occupation sites, representing semi-permanent and permanent villages, emerge during this time as well.

During this time the first locally produced pottery is seen in the Mojave Desert Region, likely coming from the Anasazi in the southwest. Also, smaller projectile points, Cottonwood and later Desert Side Notch points were introduced to use with bow and arrow technology. Plant food processing is indicated by the presence of manos and metates.

5.7.7 Ethnography

Prehistorically, there was a large amount of movement of people across the Mojave Desert and ethnographically several groups are associated with the Project Area and surrounding Mojave Desert region. The Kawaiisu, Kitanemuk, Southern Piute, Serrano, Chemhuevi, Tabtulabal, and Panamint lived in the Mojave Desert region, north, west, and east of the Project area. In this region there were four major linguistic groups originating from northern uto-aztecan groups; Tubatulabalic, Hopic, Numic, and Takic (Sutton et al, 2007: 243). The Mojave River appears to be a major boundary between Takic and Numic speaking groups during prehistoric times. Groups occupying this region of the Central Mojave Desert were of the Takic and Numic linguistic groups. Takic speaking groups originated in the southwestern Mojave Desert, expanding south and east sometime around 500 cal. B.C and include the Serrano and Kitanemuk (Sutton et al, 2007: 243). At time of contact groups south of the Mojave River and much of southern California were part of the Takic linguistic group. The groups north and east of the Project Area were in the Numic linguistic group, which included the Kawaiisu, Chemhuevi, and Southern Piute. The Serrano, Vanyume (Beñeme) and the Chemehuevi occupied the region in which the Project Area is located as reported during the ethnographic period. The Vanyume is a small division of the Serrano and little ethnographic information is known about them. The Chemehuevi also entered the Mojave Desert, however much later in time. Other groups which could have entered the Project Area were the Kawaiisu, the Kitanemuk, the Southern Piute, the Mohave, and the Ancestral Pueblo. The Project Area and valleys surrounding this region were not conducive for large scale inhabitation based on the fluctuating environmental conditions and overall arid nature of this region, therefore groups occupying/utilizing this location would have been small nomadic groups (Zigmond, 1986: 398).

5.7.7.1 Serrano

The Project area is situated within the traditional boundaries of California Indians that were associated with Mission San Gabriel during the Spanish Period (1769–1821) (Bean and Vane 1979). These Native Americans were known as the Yucaipaiem clan of the Serrano (Altschul, Rose and Lerch 1984; Kroeber 1925; Strong 1929; Bean and Smith 1978), who spoke a language that falls within the Takic family of the Uto-Aztecan language family. This language family is extremely large and includes the Shoshonean groups of the Great Basin. Due to the close geographic proximity of the Serrano and Gabrielino bands living in the area and their linguistic similarities, ethnographers have suggested that these two bands shared the same ethnic origins (Kroeber 1925; Bean and Smith 1978). For this reason, these two groups will be referred to as the Serrano, due to the geographic location in this document.

According to Kroeber (1976:611), the Serrano comprised five groups or bands, Kitanemuk, Alliklik, Vanyume, Kawaiisu, and Serrano, distributed from the San Bernardino Mountains, part of the Transverse Mountains east of the Cajon Pass across the Mojave Desert east as far as Twentynine Palms and from the Tehachapi Mountains to the northern Colorado Desert; and occupied most of modern day San Bernardino County which is fertile land (Bean and Smith 1978) (Figure 3.1). Relatives of the Serrano included the Gabrielino and Luiseno to the west and along the Pacific Coast and the Cahuilla inhabiting the Colorado Desert. For much of the Late Prehistoric Complex, the Serrano band of the much larger Serrano tribe was the likely

inhabitants of the western Mojave Desert, what is today the Cajon Pass and Barstow area. Most of what is known has been based upon the work done by Hicks (1958) and by later researchers working on CA-SBR-1000, located near Yucaipa, San Bernardino County, California. Studies indicate that the village had been occupied for thousands of years and that it was a major trading center both prehistorically and historically. Little is known about early Serrano social organization because the band was not studied until the 1920s (Kroeber 1925) and had already been influenced by missionaries and settlers. Kroeber's work (1925) indicates that the Serrano were a hierarchically ordered society with a chief who oversaw social and political interactions both within the Serrano culture and with other groups. The Serrano had multiple villages ranging from seasonal satellite villages to larger, more permanent villages.

Resource exploitation was focused on village-centered territories and ranged from primarily gathering and hunting with occasionally fishing. The primary gathering staple varied depending on locality. Acorns and piñon nuts were gathered by groups in the foothills; honey mesquite, piñon nuts, yucca roots, mesquite, and cacti fruits were gathered by groups in or near the desert (Bean and Smith 1978). Hunting activities consist of deer, mountain sheep, antelope, rabbits, other small rodents, birds, and the most desired game bird, quail (Bean and Smith 1978).

Serrano structures were situated near water sources and consisted of large, circular thatched and domed structures of willow and covered with tule thatching. These living structures were large enough to house a large direct family. In addition to the living structure, a Ramada which is a wall-less structure for outdoor cooking was located adjacently (Benedict 1924; Kroeber 1925; Drucker 1937; Bean and Smith 1978). A large ceremonial structure was also present in the villages and was used as the religious center where the lineage leader resided. Additional structures consisted of granaries and sweathouses that were earth-covered, and located adjacent to pools or streams (Strong 1929; Bean 1962-1972; Bean and Smith 1978).

In essence, the Serrano, like the neighboring groups, were primarily semi-nomadic, hunter-gatherers. Unlike, the Gabrielino, also of the Shoshonean family, the Serrano society was left relatively intact during the period of initial Spanish colonialism of southern coastal California. In 1772, Pedro Fagès made a trip through Cajon Pass to the Mojave Desert in an attempt to identify the native groups in this region, with the ultimate goal of placing the Serrano under supervision of a mission. By 1819, the Serrano were re-located to the *Estancia of* the Mission San Gabriel in Redlands (Bean and Smith 1978:573). At the time of re-location, there were likely in the order of 3500 Serrano inhabiting the Mojave Basin. However, between 1840 and 1860, a smallpox epidemic decimated the population. By 1885, there were only "390 Serranos [sic] remaining in all of southern California" (AccessGenealogy.com 2005) and the census of 1910 recorded only 100 Serrano (Kroeber 1976:616).

5.7.7.2 Vanyume (Beñeme)

Limited information was collected on the Vanyume lifeways during the historic period. What little information that exists describes the Vanyume as a small division of the Serrano living in the Mojave Desert, north of the general Serrano territory. They were generally referred to as the "Serrano of the Mohave River" by Kroeber (1925:614). The name Vanyume is a Mohave word, and the name Beñeme was given to the entire Serrano cultural group by Friar Garcés. They Vanyume spoke a Takic language related to the Kitanemuk to the west and the Serrano to the

South. Kroeber reported that the Vanyume sometimes were friendly with the Mohave and Chemehuevi, but were hostile to the Serrano of the San Bernardino Mountains (Kroeber, 1925:614). Krober also reported that the population of the Vanyume was very small at the time of historic contact. The "chief" of the Vanyume was said to have lived in one of the villages at the upper reaches of the Mojave River near Victorville. The Vanyume were hunters and gatherers. Shell beads and millingstones were also known to have been used. Other specific information about the Vanyume is unknown and they are generally associated with similar life ways as the Serrano to the south (Yohe II and Sutton, 1991).

5.7.7.3 Chemehuevi

The Chemehuevi were a band of the Southern Paiute that possibly entered the eastern Mojave Desert area from the north in fairly recent pre-historic times. The Chemehuevi, also called the Pah-Utes, were closely related to the Southern Paiute living in the Death Valley and Southern Nevada regions. At the time of ethnographic contact the Chemehuevi claimed a large portion of the eastern and central Mojave Desert, perhaps as far west as Afton Canyon on the Mojave River (Kelly and Fowler, 1986:368). Although the Chemehuevi territory is debated by different sources it clear that they inhabited the Providence Mountains. It is unclear how long the Chemehuevi occupied the eastern Mojave Desert; based on archaeological data they entered the Mojave Desert sometime in the 17th century (Yohe II and Sutton, 1991).

The Chemehuevi were strongly influenced by the Mohave and it is possible that they displaced the Desert Mojave, a Yuman speaking group (Kelly and Fowler 1986:368). Many Chemehuevi words are related to Mohave vocabulary, along with agricultural practices, house construction, warfare, and other cultural elements such as religious practices. Like the Mohave the Chemehuevi used square metates, balsas, ferry pots, paddle and anvil pottery techniques and hair dye (Kelly and Fowler 1986:369). In addition to their close association with the Mohave the Chemehuevi traded widely with the Shoshone, Kawaiisu, Serrano, Vanyume, Cahuilla, and Diegueno (Kelly and Fowler 1986:369).

Influence from the Pueblo area, to the southeast, is seen in the form of agricultural practices in many of the Southern Paiute groups. The Chemehuevi, in more well watered areas and flood plains, grew yellow maize, gourds, beans, and winter wheat, combining Mohave and Pueblo practices (Kelly and Fowler 1986:371). Kroeber reported that the Chemehuevi occasionally farmed small areas of corn, beans, melon, pumpkins, and wheat. In more arid areas it is believed that the Chemehuevi were generalized hunter gatherers. They hunted large game of deer and mountains sheep along with rabbits, rodents, lizards, and other smaller game (Kroeber 1925:597). Plant foods were of great importance and included a variety of grass seeds, pinyon, and mescal (yucca).

The Chemehuevi had a large range associated with seasonal food practices and they traveled through most of the Mojave Desert as far as the Tehachapi area and the San Bernardino Mountains. Occasionally they would travel to the Pacific coast to collect haliotis shells (Kelly and Fowler 1986:377). It was also reported that the Chemehuevi would travel as far east as the Hopi's territory, which was approximately a two-month round trip (Kelly and Fowler 1986:377).

Little is known about the Chemehuevi material culture. However in historic times they used basketry, primarily willow, to a great extent both for storage and for carrying possessions

(Kroeber, 1925:97). They also made basketry hats. The Chemehuevi used some pottery but relied more upon basketry.

The Spanish colonies had little effect on the Chemehuevi until the early 1800s. Although other Southern Paiute groups were forced into slavery by the Spanish, the Chemehuevi's isolated territory protected them from being assimilated into the mission system. With the opening of the Old Spanish Trail the Chemehuevi were greatly affected by the Spanish. At that time many Chemehuevis were taken as slaves or brought to the missions (Kelly and Fowler 1986:386).

In 1874 the United States government added on to the Colorado River Reservation in an effort to move the remaining Chemehuevi onto the reservation. However this reservation was shared with the Mohave who the Chemehuevi had periodic conflicts with, and from 1865 to 1871 the Chemehuevi were at war with the Mohave. Therefore they were reluctant to move to the reservation (Kelly and Fowler 1986:388). Some of the Chemehuevi were either forced to move to the reservation or went on their own accord; however, many stayed in their historic locations finding work on farms and ranches and in mines. In 1901 the Chemehuevi received their own reservation in the Chemehuevi Valley

5.7.7.4 Other Native American Groups Associated with the Region

In addition to those groups affiliated with the Project APE, many other groups occupied and utilized the Mojave Desert in a variety of ways. The Anasazi of southern Nevada greatly influenced the cultures within this region. By 1450 B.P. the Anasazi were exploiting turquoise deposits at Halloran Springs, approximately 25 miles northeast of the Project Area. This area, just south of Death Valley, is one of the only areas containing turquoise in the region. The Anasazi Pueblo was 150 miles across the desert from Halloran Springs. Anasazi miners must have spent a considerable amount of time in the area based on the amount of turquoise mined and the abundance of their "Basketmaker III" pottery found near Halloran Springs (Fagan, 2003: 310). The turquoise veins were mined up to twelve feet below the ground. For centuries Mojave turquoise was traded east, throughout the Southwest; however, it does not appear that turquoise was traded to the west.

Bow and arrow technology could have been introduced to California by the Anasazi or a Great Basin group, during this time. Circa 1450 B.P. the use of bows and arrows spread throughout California's eastern deserts, eventually becoming the dominant hunting technology throughout California. The bow and arrow has many advantages over spears and atlatls and made hunting much more efficient. In addition, by 1200 B.P. buff and brown pottery, made by Ancestral Pueblo groups of the Lower Colorado River region, entered the Mojave Desert. The trade of technology along with items such as sea shells and steatite objects probably took place along the Mojave Trail (Fagan, 2003: 311).

Along both the east and west banks of the Colorado River lived the Mohave. During the winter the Mohave lived in semi subterranean houses and depended upon maize agriculture for their subsistence. Throughout the rest of the year they were a hunting and gathering group, often traveling west far into the Mojave Desert.

The Mohave traveled throughout southern California and northern Arizona utilizing a large network of trails (King and Casebier, 1976: 281). Two major geographical features influenced

the Mohave's trade routes, the location of their villages along the Colorado River and the waterless portion of the desert, often called the Mojave Sink or Mojave Trough. The two major trade routes used by the Mohave started at their villages along the Colorado River and took different routes around the Mojave Sink. The first was the Pah-Ute Creek to Soda Springs route, which later became known as the Mojave Road wagon train. The other ran south of the Mojave Road through Poshay Pass and the Mojave River flood plain to the southeast corner of Soda Lake. The more northern route, the Mojave Road, was more heavily used both prehistorically and in historic times by Native Americans and European and American settlers alike (King and Casebier, 1976: 282).

Although the Mohave lived to the southeast of the Project Area they had a great amount of influence over the Mojave Desert region. They were skilled traders and traveled long distances to either fight or trade with other groups (Fagan, 2003: 297). Their movement across the southwest promoted the spread of new technologies, beliefs, and ideas throughout the desert and southwestern regions.

5.7.8 Historic Period

5.7.8.1 Spanish Period (1540 to 1821)

The Spanish had explored much of the California coast and both San Francisco and Monterrey bays by 1769, but paid little attention to the California interior. Several factors were detrimental to European exploration in the Project area; travel and communication were slow; there were few roads, trails, and maps; and no supply stations existed in California's interior deserts.

From 1775 to 1776, Friar Francisco Garcés, a Franciscan originally stationed near present day Tucson, Arizona, entered the Mojave Desert as part of Spain's effort to settle Alta California. Garcés traveled with Captain Juan Bautista de Anza's expedition until they crossed the Colorado River near present day Yuma, Arizona (King and Casebier 1976:283). Garcés left the expedition with Native American guides at the Colorado River crossing and traveled along the Mojave Trail to Mission San Gabriel in Los Angeles. On his return trip he visited several Mohave villages along the banks of the Colorado River. The journal Garcés kept during this expedition is the earliest written record of the eastern Mojave Desert.

During the Spanish Period no permanent European settlements were established in the Project vicinity, although there were reports that the Spanish had active mines in the Barstow area. It is unknown if these mines were utilized by the Spanish, Native Americans, or later Mexican or American prospectors because only mine shafts remained and no written records have been discovered (King and Casebier 1976:300).

The closest mission, Mission San Gabriel in Los Angeles, was too far away to have an every day effect on the Native Americans living in the Mojave Desert. However, the mission system and the Spanish military did have a detrimental effect on the Native American population in the Mojave Desert. Because the Mohave Tribe's mobility throughout the region promoted communication between other tribes throughout California and the Southwest, the Spanish government became concerned about the tribe's power and influence as traders. In 1819 Lieutenant Gabriel Moraga led expedition of approximately fifty soldiers into the Mojave Desert

to attack the Mohave Tribe (King and Casebier 1976:284). Moraga's expedition was only the second Spanish-sponsored trip into the Mojave Desert, and was an attempt at revenge against the Mohave for their raids on Spanish settlements on the coast and for their ability to spread unrest against the Spanish in other Native American groups. Lack of water in the arid Mojave Desert forced Moraga and his soldiers to turn back.

5.7.8.2 Mexican Period (1821 to 1848)

In 1810, an independence movement began as many rancheros sought to split Mexico (and California) from Spain. In 1821, this desire came to fruition when New Spain (Mexico) became independent. Following Mexico's independence, the Alta and Baja California missions received less financial support from Spain and Mexico, and ultimately, independence from Spain was a catalyst for Mexico to secularize the Alta and Baja California missions. Secularization would free vast amounts of land under mission control and the land would become civilian pueblos or large land grants awarded to Mexican, American, or European settlers. On 6 January 1831, Governor Jose Maria Echeandia announced the secularization of a number of missions, and by 1834, all the missions were secularized including Mission San Gabriel in Los Angeles (Rolle 2003). Within ten years after secularization the mission had failed, the neophytes had left, and the buildings were in disrepair. Following its secularization, the San Gabriel mission became a parish for the City of San Gabriel and had little further effect on the Native Americans in the Project Area.

During Mexican control of Alta California, Americans started to enter California through the Mojave Desert. Jedediah Smith, mountain man and fur trapper, was the first American to reach California via an overland route. He traveled along the Mojave Trail and visited several Mohave villages in 1826. After Smith's initial visit other American mountain men and trappers ventured into the desert, including William Wolfskill, George C. Yount, Christopher "Kit" Carson, James Ohio Pattie, and Ewing Young (Brooks and others 1981; King and Casebier 1976:285).

As early as 1775 to 1776, the Spaniards were concerned with the lack of trade and communication routes connecting their settlements on the Rio Grande in New Mexico with those in Alta California. Friar Garcés's early expedition across the desert showed that there was a direct route between the two Spanish colonial areas. However it was not until 1829 to 1830 that a direct route was established. The new route, or the Old Spanish Trail, did not exactly follow Garcés's 1775 route, instead it led from New Mexico into Utah and then turned southwest and headed to the Mojave River through the San Bernardino Mountains (King and Casebier, 1976:287). It is speculated that the trail ran south through southern Nevada and entered California through an unknown valley and followed along part of the Mohave Trail; however, the exact location of the entire Old Spanish Trail is unknown.

5.7.8.3 American Period

5.7.8.4 Early Land Uses and Transportation

"Manifest Destiny," was one of the likely causes for the Mexican-American War from 1846 to 1848. Jacksonian Democrats coined the phrase in the 1840s as a political philosophy whereby

the United States would control all of the land between the Atlantic and Pacific oceans. The focus was primarily on the northwest coast in Oregon territory and on the Texas territory. In 1845, during the Presidency of James K. Polk, the United States annexed Texas and the following year invaded Mexico. In 1848, the United States, victorious over the Mexican Army, signed the Treaty of Guadalupe Hidalgo, and acquired all Mexican territory north and west of the Rio Grande and Gila Rivers, which included Texas, New Mexico territory, and Alta California. Additionally, the discovery of gold in 1848 and the ensuing Gold Rush in 1849 brought numerous settlers to California.

Soon after California was granted statehood in 1850 the government wanted to recognize all of the trails running through California to promote immigration into the state, facilitate trade and communication, and develop routes of defense. A year after the Treaty of Guadalupe Hidalgo was signed, Lieutenant James H. Simpson of the Army Corps of Topographical Engineers attempted to follow Friar Gracés's 1775 direct route across the Mojave Desert, and in 1851 the U.S. Army Corps of Engineers sent another expedition to explore the area. During the 1840s and 1850s the Pacific Railroad also contemplated using Gracés's route in an attempt to find the most practical course for a railroad line across the desert. Several explorers, hired by railroad companies, traveled throughout the Mojave Desert, during the 1840s and 1850s. Eventually a more northern route was selected, traveling through Utah, for the transcontinental railroad line. In the late 1850s the General Land Office for California began the process of mapping the Mojave Desert area and at that time several groups of surveyors wandered the desert (King and Casebier 1976:288-289).

North of the Project Area, along the 35th Parallel, ran Beale's Wagon Road, which was in use between 1857 and 1861. Edward Fitzgerald Beale was one of the most famous American Frontiersmen and was superintendent of the wagon road. Beale was known for his experimentation with using camels for crossing the western deserts. The Mohave Tribe attacked a wagon train on the route in August 1858. The attack ended the use of the 35th parallel as a transcontinental route because of the danger of crossing through Mohave lands.

In 1859, the Mojave Trail developed into a wagon road connecting Los Angeles with the Colorado River near the Mohave villages. This increased the number of travelers and settlers into the Mojave Desert. As early as 1860, miners were working in the El Dorado Canyon along the Colorado River. Mining discoveries were also made in northwestern Arizona, bringing additional traffic to the Mojave Trail. This resulted in additional conflict with the Chemehuevi, Mohave, Hualpai, and Yavapai Native Americans in the desert region (King and Casebier 1976:295).

Although there was considerable traffic through the Mojave Desert into Southern California there were few settlements near the Project Area. Besides the mining industry most other settlers did not stay in the desert until the introduction of the railroad. Only a few early homestead claims were filed. These early homesteads consisted mainly of ranches raising sheep and cattle. The arid environment prohibited large scale agriculture except on the banks of the Mojave or Colorado Rivers.

5.7.8.5 Anglo-American Relationships with Native Americans

Before transportation improvements were made, distance and harsh conditions in the Mojave Desert caused the Native Americans in the region to have little contact with Europeans and

subsequently Americans. Bands of the Chemehuevis, part of the Southern Paiutes, occasionally expressed to earlier settlers they were intruding on Native American land, but little action was taken. While the Mohaves were a large and powerful tribe and could wage war in large numbers against intruders, the Chemehuevis were forced to remain in small bands and were commonly on the verge of starvation of because the lack of water and other resources in their territory. They were not able to gather in large groups or participate in acts of resistance against American settlers in their territories. Although the Chemehuevis were originally hostile to American settlers, by the 1860s they were so decimated by disease and lack of resources that they stopped any attempts at resistance, and little military attention was paid to them by the United States. By the 1870s they had been assimilated into American culture and were forced into laboring in prospectors' mines and on ranches (King and Casebier 1976:298-299).

The Mohave were a much stronger tribe and were able to organize large parties to wage war with United States soldiers. In 1859 Major William Hoffman led approximately 600 men to attack the Mohaves and their villages, ultimately forcing a Mohave surrender. Both before and after the large attack on the Mohaves, hundreds of United States soldiers were stationed in the desert, many of them along the Mojave Trail, to protect the transportation of supplies and the newly arrived settlers (King and Casebier 1976:295).

5.7.8.6 Mining in the Mojave Desert

Since the 1860s, mining has been the most important commercial industry near the Project Area. Silver was discovered in 1863, although it is possible the Spanish had mined in the area almost a century before. In the 1860s prospectors attempted to discover mines in the area to sell to investors with sufficient capital to develop them. The following decade, smaller operators attempted to compete with larger corporations, but without railroad transportation, very little money was made until the early 1880s with the coming of railroad through the eastern Mojave Desert (Brooks and others 1980; King and Casebier 1976:300-305).

The period between 1900 and 1919 was called the "the Great Years" for mining in northeastern San Bernardino County (King and Casebier 1976:305). This decade was more profitable for the region than any other. Copper, lead, zinc, and other base metals, as well as gold and silver, were mined throughout the Mojave Desert and San Bernardino County. Also, during World War I chromium, manganese, tungsten, and vanadium were mined. Several large mining districts were developed, including Copper World, near Valley Wells; gold mines at Hart; lead, zinc, and copper in the Mohawk mines near Mountain Pass; copper mines near Von Trigger Spring; and gold mines at the north end of Old Dad Mountain (King and Casebier 1976).

During the Great Depression a resurgence of gold mining took place, but World War II caused a return to the mining of base metals. The Vulcan Iron mine, near Foshay Pass in the Providence Mountains northeast of the Project Area, also was popular during that time period. Since the end of World War II metal mining has considerably slowed. In more recent years, other nonmetals such as clay, talc, and cinders gained popularity, especially around the Kingston Mountains in the vicinity of Interstate 15 and aggregate mining (sand and gravel) has become prevalent in the area.

5.7.8.7 Manganese Mining in the Project Vicinity

Manganese mines are the most prevalent in the vicinity of the Project Area, including the Logan Mine within the Project Area, and the Black Butte Mine, which is located approximately 0.5 mile east of the Project Area. By 1943, deposits of manganese had been located in several desert locations throughout San Bernardino County, including the Lavic, Owl, and Whipple mountains. Manganese first began to be mined in earnest in the Project vicinity during World War I, when the demand for manganese increased due to its use in the production of iron and steel. After World War I, manganese mining throughout the country decreased and continued to wane throughout the Great Depression of the 1930s, but once again increased with the onset of World War II in the 1940s. In addition to iron and steel production, manganese also was used in the minting of the war-time nickel between 1942 and 1945. Manganese, in combination with copper and silver, was used to produce these coins in an effort to conserve nickel for military uses (Tucker and Sampson 1943).

In 1942, the Metal Reserve Company of Washington D.C. published competitive price schedules for manganese ores, which offered $48 per ton for high grade ore (ore containing 48 percent manganese), $35.20 per ton for low grade A ore (44 percent manganese), and $26.00 per ton for low grade B ore (40 percent manganese). Ores containing 35 to 39 percent manganese also were accepted at a reduced price. Manganese producers in San Bernardino County were instructed to bring their ores to stockpile points in Parker and Phoenix, Arizona. Area miners were instructed to take ores containing 15 to 35 percent manganese to the Kaiser Steel Corporation in Fontana, California. The California Division of Mines and Geology reported that manganese ore was shipped from five deposits in San Bernardino County in 1942 with ores containing 20 to 46 percent manganese. After the war, several manganese deposits continued to be worked in San Bernardino County (Tucker and Sampson 1943; Wright and others 1953).

5.7.8.8 Railroads and Settlements

The BNSF Railroad (historically the Atlantic & Pacific Railroad and later the Atchison, Topeka & Santa Fe Railroad) is located between the Solar One Phase I and Phase II project areas and within the Pisgah triangle project area. The Southern Pacific Railroad constructed these rails between Mojave and Needles to intercept the Atlantic & Pacific Railroad (A&P) tracks on the Arizona border in an attempt to protect its California interests. The Southern Pacific constructed the Mojave to Needles branch between 1882 and 1883, working east from their station in Mojave. The A&P began construction of their trackway in Albuquerque, New Mexico in 1880 and reached Needles in May 1883. Once reaching Needles, the A&P began construction of a bridge over the Colorado River, which was completed in August 1883 (Gustafson and Serpico 1992; Myrick 1992).

For more than a year, the two lines continued to operate independently of each other. The Southern Pacific Railroad instituted tri-weekly service to Needles in 1883, but the trip through the Mojave Desert was long and desolate. The railroad had constructed only one station and turntable in the 124-mile stretch between Mojave and Ludlow. The Southern Pacific Railroad was reluctant to join rails with the A&P fearing that the completed line would compete with their newly constructed Sunset Route, which crossed into California further south on the Arizona

border at Yuma. Passengers heading east on the Southern Pacific Railroad's line to Needles were inconveniently required to disembark from the train with their belongings and transfer to the A&P cars. Although each of the railroads developed local business, the amount of passenger travel did not reach the volume necessary to support operation. The Southern Pacific Railroad's route through the Mojave Desert did facilitate mining operations in the area. Anticipating large future revenues from hauling bulk ore, the railroad provided water for miners at 2 cents per gallon anywhere on the route, putting an end to the water scarcity problem for mine development in the area (Myrick 1992).

By the end of 1883, the A&P began making plans to construct their own line parallel to the Southern Pacific's line across the Mojave Desert to San Francisco. The Southern Pacific Railroad realized that if the A&P constructed a parallel line across the desolate Mojave Desert, its line would essentially become useless and profits would decrease. In October 1884, an agreement was signed in which the Southern Pacific Railroad would sell its Needles to Mojave section to the A&P for $30,000 per mile. Until the debt was paid, the A&P would lease the line. In addition, the A&P also received an option for trackage rights between Mojave and San Francisco. The A&P received full title to the Mojave to Needles branch in 1911 (Gustafson and Serpico 1992; Myrick 1992).

The California Southern Railroad joined with the A&P in 1885 to provide service from Kansas City to San Diego. The junction of the two lines was initially called Waterman Junction, but in 1886 it was renamed Barstow. Barstow is located approximately 37 miles west of the Project Area and is the closest city. The construction of the railroad brought numerous settlers to the area and although other railroad lines were eventually constructed throughout southern California, the route passing through Barstow remained a popular line for both freight and recreational travel. In addition, the railroad acted as a lifeline connecting Barstow, alone in the desert, to the rest of Southern California. Barstow was a sizable railroad hub, and the railroad was the main employer in the city for many years.

In 1897, the A&P was re-designated as the Santa Fe Pacific Railroad. When the A&P took over the Mojave to Needles branch, depots existed at Daggett, Fenner, and Needles. During the 1880s, 1890s, and the first decade of the twentieth century, Santa Fe Pacific constructed facilities at various locations along the line. All of the structures were wood frame, with the exception of brick and reinforced concrete structures in Needles. Santa Fe Pacific railroad sidings in the project vicinity include Troy, Hector, Pisgah, and Lavic. The Hector siding is the closest to the project area. Neither the Pisgah or Troy sidings had any depot facilities. Hector had a 12-by-14-foot wood frame telegraph and train-order office that was constructed in 1906, which was closed in 1923 and moved to Earp in 1934. The Lavic siding was the largest of the four with a 24-by-34-foot frame combination passenger and freight depot that was constructed in 1901. The depot was closed in 1923 and removed (Gustafson and Serpico 1992; Myrick 1992).

The lack of water along the Mojave to Needles branch required the railroad to haul water in large tanks to the stations and construction camps. In 1897, a station was constructed at Newberry Springs, approximately 6 miles west of Troy, and this station became the railroad's primary source of water in the region. Although freight trains typically carried surplus water cars, engineers often had to go back to Newberry Springs for additional water supply (Gustafson and Serpico 1992; Myrick 1992).

5.7.8.9 Old National Trails Highway

Prior to the construction of the railroad between Needles and Barstow in 1883, travel across the Mojave Desert in the Project vicinity was limited to prehistoric trails; early trails developed by mountain men, early explorers, and gold seekers; and routes developed during the railroad surveys of the 1850s. After the railroad was completed, new roads were constructed between local mines and railroad sidings, and a wagon road was constructed adjacent to the railroad tracks from Barstow to the Arizona border (Hatheway 2001).

The automobile first made its appearance to the American public in the late 1890s, and by 1900 automobiles were still the toys of the rich with only one for every one thousand Americans. Although Henry Ford introduced his Model T in 1907, widespread use of the automobile did not occur until after World War I. In 1914, Ford perfected full assembly line production and two years later more than half a million automobiles were sold. As the use of the automobile rose, the demand for good roads increased. Most rural roads in the 1900s had been constructed for wagon traffic and were not suited to automobile traffic (Fischer and Carroll 1988; Keane and Bruder 2004; Lyman 1999; Paxson 1946).

By 1910, national and local organizations promoted good roads in the United States, including the Old National Trails Highway south of the Project. A precursor to U.S. Route 66, the Old National Trails Highway was part of the 2,448-mile Ocean-to-Ocean Highway from Baltimore, Maryland to the California coast. The Old National Trails Highway also was part of the National Auto Trail System, an informal network of automobile routes marked by local organizations in the early twentieth century. The Old National Trails Highway was located in the vicinity of the alignment of the old wagon road that was constructed adjacent to the Santa Fe Railroad tracks in the 1880s. The highway was established in 1912 and by 1914 the Auto Club of Southern California had signed much of the highway (Keane and Bruder 2004; Wikipedia contributors 2008).

In 1916, the Federal Highway Aid Act was passed to help fund rural roads, using a 50/50 funding match for states with a highway department. Route planning; however, remained a local matter, which usually did not include engineering surveys. In 1919, Congress liberalized the funding match requirements, and by late 1921, Congress passed the Federal Highway Act that further reduced the state match to about 26 percent (Lyman 1999) and required federal aid to be concentrated upon "such projects as will expedite the completion of an adequate and connected system of highways, interstate in character" (Paxson 1946:245). Up to seven percent of a state's roads could be listed for reconstruction to create the national highway system. By 1923 a tentative plan had been developed linking every city with a population of 50,000 or more, with construction planned over a ten-year period (Paxson 1946).

During the 1920s, automobile travel was an adventure for many Americans and was heavily promoted. By the late 1920s, much of the Old National Trails Highway in the Project vicinity had been widened and oiled or covered with gravelly sand. However, the segment of the highway across the Mojave Desert was notorious for its poor condition, and by 1925 the highway was full of ruts and chuck holes. The highway was narrow with no road shoulders or striping, tended to follow the natural topography of the area, and was vulnerable to the effects of erosion. The state of California had designated the highway as a public highway in 1919, but did not take

any responsibility for the highway between Barstow and Needles until 1923, leaving the burden of maintenance to San Bernardino County. Despite the poor conditions of the highway, motorist were never more than four miles from the railroad where they could find help in the form of stations and section crews, and water was available every 5 to 10 miles (Bischoff 2005; Hatheway 2001; Scott and Kelly 1988).

In 1926, the American Association of State Highway and Transportation Officials designated the Old National Trails Highway in the Mojave Desert as U.S. Route 66. U.S. Route 66 was one of the main arteries of the National Highway System and was one of the first great highways in the United States, running from Chicago to the Pacific Ocean. Federal funding allowed for improvements to occur, such as the construction of road shoulders and medians. In the 1930s, the original alignment of the Old National Trails Highway was abandoned in favor for a route to the south, which is the current alignment of historical U.S. Route 66. The new U.S. Route 66 alignment eliminated sharp turns, reduced steep grades, and straightened the roadway to make higher speeds possible. The use of heavy machinery allowed for large road cuts that had not been possible in the early days of road building. The section of U.S. Route 66 from Needles to Los Angeles was the most heavily traveled section of the highway, and in 1934 this segment of U.S. Route 66 was paved. Much of the paving of U.S. Route 66 was completed by the Works Progress Administration during the Great Depression of the 1930s. By 1938 all of U.S. Route 66 was paved (Bischoff 2005; Scott and Kelly 1988; Wikipedia contributors 2008).

U.S. Route 66 an important transportation route during the Great Depression. In his work, The Grapes of Wrath, John Steinbeck wrote about frequent migration of Midwestern farmers to the Pacific coast along U.S. Route 66. World War II caused further migration to the west coast along U.S. Route 66 as millions of Americans went to work in war related jobs in California. U.S. Route 66 became so famous that it was memorialized in Bobby Troup's jazz song "Get Your Kicks on Route 66" (Scott and Kelly 1988) and was featured in many Hollywood movies.

Thousands of business opened along U.S. Route 66 mostly serving cross-country travelers. Businesses varied from grocery stores, service stations, restaurants, and motels to dance halls and tourist attractions (Scott and Kelly 1988). One of these tourist attractions in the project vicinity likely was the Pisgah Crater, a young volcanic cinder cone located south of the Project Area. A road was constructed from U.S. Route 66 to the Pisgah Crater between the late 1930s and early 1950s either to provide access to travelers along the highway or to local aggregate miners.

Barstow was the last stop from Los Angeles before crossing the desert or the first stop after the desert, and was a popular rest area along the highway even during the Depression. During that time business from U.S. Route 66 was the most important industry to the small city. By World War II many businesses along U.S. Route 66 were extremely competitive for travelers' money. Native American crafts sales became an important industry along the route. During the war military use of the road also grew, especially associated with the military training bases in the Mojave Desert (Scott and Kelly 1988).

The era after World War II and before the opening of other major east-west interstate highways, such as Interstate 40, is known as the golden age of U.S. Route 66. However, the increased traffic along U.S. Route 66 also caused the end of the highway. Although the highway was an important east-west thoroughfare, it could no longer handle the amount of traffic and heavy

military equipment using the road. After World War II a new national highway system was planned, which eventually ended extensive use of U.S. Route 66.

There are no historic buildings associated with U.S. Route 66 along the segment of the road that is within 0.5 mile of the Project Area. Historical buildings associated with U.S. Route 66 still exist in the town of Ludlow, located about 12 miles east of Pisgah, and in Newberry Springs, about 15 miles west of Hector.

5.7.8.10 Southern California Edison and the Hoover Dam

A Southern California Edison (SCE) steel-tower 220-kilovolt (kV) transmission line is located along the southeastern border of the Project Area. SCE installed the transmission line to bring power to their service areas from the Hoover Dam in 1937 (personal communication, Thomas Taylor, Manager, Biological and Archaeological Resources, SCE, 18 September 2008).

Plans for development of a hydroelectric plant on the Colorado River were conceived as early as 1902 in response to fuel shortages that were limiting the mining activities in the vicinity of the river. SCE began to investigate development of such a plant and signed an option to utilize the river water for power generation. Engineers surveyed the Colorado River and a preferred dam site was selected, but at the time the technology to transport the power to the SCE's service area (a distance of 300 to 400 miles) at high voltages did not exist. Because of technological limitations and the decline in mining activity along the Colorado River, SCE abandoned the option (Myers 1983).

Throughout the next twenty years, development of a power generating facility on the Colorado River was discussed and debated by public and private power companies. The unreliable flows of the river called for a dam to be constructed. In 1921, SCE and U.S. Geological Survey engineers once again surveyed the river and throughout the 1920s SCE filed licensing applications with the Federal Power Commission in an effort to obtain the right to construct dams and power generating facilities on the river, but none were approved. In 1928, the federal government instituted the Boulder Canyon Act, which stipulated that the government would construct a dam on the Colorado River if public and private utility companies would take responsibility for generation and distribution. In 1930, SCE signed a contract stating that they would generate power for themselves and all other investor-owned utility companies. Power for state and municipal utilities, as well as the metropolitan water district, would be produced by the Los Angeles Bureau of Power and Light (Myers 1983).

Construction the Hoover Dam started in 1931 and concluded in 1935. By 1936, power production for community use began. Now possessing the technology to transport high voltage electricity across hundreds of miles, SCE constructed the 220kV transmission line in the Project vicinity to deliver electricity to its customers in southern California (Myers 1983).

5.7.8.11 Natural Gas Pipeline

Two natural gas pipelines run through the Solar One Project area—the Pacific Gas and Electric Pipeline and the Mojave Pipeline. Although it was known that natural gas could be used for fuel in the early years of the nineteenth century, it was not until 1859 when large amounts of natural gas were discovered in Titusville, Pennsylvania, that a commercial market for natural gas

developed. Wide-spread use of natural gas began in the west when southwestern natural gas fields were discovered in the 1920s. Large natural gas fields found in the north Texas panhandle in 1918 and in Kansas in 1922, as well as the development of the technology needed to transport natural gas the long distances to urban areas, resulted in the development of the interstate gas pipeline industry (Castaneda 2001).

The Pacific Gas and Electric Pipeline is a 33-to-44-inch natural gas pipeline. The pipeline is an interstate pipeline that carries natural gas from the natural gas fields of Texas and New Mexico to Northern California. The 502-mile long pipeline was constructed in 1948, which at the time was the largest pipeline in the country (PG&E Corporation 2004).

The Mojave Pipeline is a 24-inch natural gas pipeline, which is owned by El Paso Natural Gas Corporation, one of the largest natural gas companies in North America. The El Paso Natural Gas Corporation expanded their services into southern California in the 1940s in response to the post World War II population growth. The Mojave Pipeline is a 450-mile-long interstate pipeline that carries natural gas from Arizona to Kern County, California. It was constructed in the late 1940s (El Paso Corporation 2008; International Directory of Company Histories 1996).

5.7.8.12 Modern Infrastructure

Throughout the 1950s and 1960s, U.S. Route 66 remained the main road between the Midwest and the west coast. Increased traffic and the narrowness of the roadway eventually led to the downfall of U.S. Route 66. On August 2, 1956 President Dwight D. Eisenhower signed the Federal Aid Highway Act which provided funding to upgrade America's roads. Eisenhower based his vision of a more connected America on Germany's Reichautobahen rural super highways. Eisenhower and his advisors originally envisioned creating a 40,000 mile interstate system costing approximately twenty-seven billion dollars. Construction began almost immediately throughout the United States (Weingroff, 2008).

On December 13, 1958, Interstate 15 opened between Victorville and Barstow. This marked the beginning of the modern highway era in the Barstow area. The entire Interstate 15 from Los Angeles to Las Vegas was opened by July 1961. In 1961, the stretch between Baker and Vegas was used by more than 500 vehicles an hour in one direction (Swisher 1997).

I-40 begins at its junction with Interstate 15 in Barstow. I-40 then runs through the Mojave Desert to Needles and into Arizona. I-40 is along the southern edge of the Project Area. Although the I-40 is now a cross-country highway, its last sections were not built until 1980. In the southwest, much of present day I-40 absorbed U.S. Route 66. In addition, much of the western portions of I-40 follow the Beale Wagon Road. The segment of I-40 in the project vicinity was not constructed until 1968.

Other modern infrastructures in the Project vicinity are two steel tower transmission lines, wooden pole power lines, and underground pipelines along the south and east borders of Solar One. Radio facilities are also located south and east of the Project Area.

5.7.8.13 Military Use

Several military bases are in the Mojave Desert region including Twenty-Nine Palms, south of the Project Area, and Fort Irwin, located approximately 37 miles northeast of Barstow and currently home to the National Training Center. This and other military installments in the area led to an increase of traffic around the Project Area and in the area's population as civilians associated with the military took up residence.

During World War II, General George S. Patton established the Desert Training Center in California and Arizona, much of which was located on public land east of the Project Area. Training exercises were designed to prepare U.S. troops for combat in the hostile desert terrain and climate. The army established camps and emergency airfields, remnants of which can still be found, including rock alignments designating tent camps and emergency airfields. The Desert Training Center closed in 1944 at the end of World War II. During the desert training, the army created the first detailed maps of the Mojave Desert to facilitate training activities. The maps were created using aerial photography and land-based methods. After the war, those maps were used by the U.S. Geological Survey to create 15-minute topographic quadrangles in the late 1940s and early 1950s (Nystrom 2003).

Twenty years later during the Cold War, the Mojave Desert in the vicinity of the Project Area again hosted a major training exercise. Training exercise Desert Strike included troops from both the U.S. Army and Air Force and encompassed a 12 million-acre area in California and Arizona centered on the Colorado River. The two-week exercise was designed to test tactical employment of nuclear weapons, and involved combat between two hypothetical countries. The two-week exercise in May 1964 resulted in the expenditure of approximately $60 million and 33 deaths (Garthoff 2001; Nystrom 2003; Time Magazine 1964).

5.7.8.14 Conclusions

Prior to European arrival in California, the Project Area was inhabited for thousands of years representing multiple archaeological complexes of unknown cultural affiliation and during ethnographic times by the Serrano, Vanyume, and the Chemehuevi, as well as exploitation by the Anasazi. The Project Area lies in a transitional zone near pluvial lakes, such as Troy Lake located to the west of the Project Area, which experienced episodes of inundations and desiccations. As a result it is unlikely that this area would have been suitable to support a large population for prolonged periods of time. Indigenous people traveling in and around this area adapted to these arid desert environments and managed successfully to exploit resources within this area of the Mojave Desert evident in the cultural materials they left behind. During the Spanish and Mexican periods, San Bernardino County and the Project Area remained relatively isolated; there were no Spanish and Mexican land grants in the region surrounding the Project Area. During the American period, the area was not ranched or farmed due to arid conditions, though recent attempts at cattle grazing are noted. Mining and transportation developed into the two most important industries in the Mojave Desert. Today the area is still a major transportation corridor for both rail and road.

5.7.9 Key Personnel Qualifications

All staff working on the Class III Intensive Field Survey meet the professional standards of the Secretary of Interior Standards and Guidelines for Archaeology and Historic Preservation, National Parks Service, 1983. Refer to Appendix Z – Technical Report /Appendices for key personnel.

5.7.10 Report of Findings and Evaluation Recommendations

5.7.10.1 Records Search Results

5.7.10.1.1 Previously Conducted Investigations

On July 28, 2008, Robin E. Laska and Dustin Kay performed a records search at the Archaeological Information Center, San Bernardino County Museum, which is the California Historical Resource Information System (CHRIS) cultural resources database repository for San Bernardino County. Ms. Laska searched all relevant previously recorded cultural resources and previous investigations completed for the Project area and a one-mile search radius. Information provided by Ms. Laska included location maps for all previously recorded trinomial and primary prehistoric and historical archaeological sites and isolates, site record forms and updates for all cultural resources previously identified, previous investigation boundaries and National Archaeological Database (NADB) citations for associated reports, historic maps, and historic addresses.

According to the San Bernardino Archaeological Information Center, San Bernardino County Museum, 18 cultural resource studies have been performed within the Solar One APE and within the 1-mile search radius surrounding the Project Area (Table 5.7-1; Figure 6.1-1 Appendix Z Confidential Technical Report–Confidential Appendix A). Of these, 1 occurs exclusively within the Solar One APE, eight occur in 1-mile search radius, but not within the Solar One APE and nine occur within both the Solar One APE and 1-mile search radius.

Of these investigations; 12 were linear pedestrian surveys, seven of the 12 extend into the Solar One APE; six previous studies examined several separate rectangular areas in the region, two of these extend into the Solar One APE. The previous investigations examined less than 5 percent of the Project APE. Fifteen of the previous surveys were positive for cultural resources, 10 of these studies occur within the Solar One APE. The vast majority of the Project area has not been previously investigated. The table below and summarizes the previous studies conducted in the within the Solar One APE and 1-mile search radius, most of which are linear in which these areas are highly disturbed resulting in negative findings. Contrary to this some of the previous studies have erroneously stated the absence of cultural material, in locations within the Solar One APE, which the current intensive field survey has disproved. The previous investigations within the Project APE are available in Appendix Z Confidential Technical Report – Appendix D.

Table 5.7-1
Previously Conducted Cultural Resources Investigations within the Solar One APE and One-Mile Search Radius

Survey Report Number	Company	Author	Date	Report Title	Quadrangle	Investigation Type	In APE	In 1- mile research radius
1060038		Simpson, Ruth D.	1958	The Manix Lake Archaeological Survey	Hector Station	Positive Archaeological Survey		X
1060047		Simpson, Ruth D.	1960	Archaeological Survey of the Eastern Calico Mountains	Manix, Harvard Hill, Newberry Springs, Tory Lake, Alvord Mountain, Daggett, Lane Mountain	Negative Archaeological Survey		X
1060874	Archaeological Research Unit, UCR	Barker, James P., Rector, Carol H., and Wilke, Philip J.	1979	An Archaeological Sampling of the Proposed Allen-Warner Valley Energy System, Western Transmission Line Corridors, Mojave Desert, Los Angeles and San Bernardino Counties, California and Clark County Nevada	Baldy Mesa, Adelanto, Victorville, Apple Valley North, Barstow SE, Ludlow, Ash Hill, Manix, Harvard Hill, Clark Mountain, Roach Lake, Broadwell Lake, Soda Lake, Mesca Range, Searchlight, Alvrod Mountain, Danby, Old Dad Mountain, Kelso, Crescent Peak,	Positive Archaeological Survey	X	X

Table 5.7-1
Previously Conducted Cultural Resources Investigations within the Solar One APE and One-Mile Search Radius

Survey Report Number	Company	Author	Date	Report Title	Quadrangle	Investigation Type	In APE	In 1- mile research radius
					Ivanpah, Cave Mountain, Red Pass Lake, Baker, Halloran Spring, Kingston Peak, Dagget, Lavis, Apple Valley, Cady Mountains, Cadiz, Ord Mountains, Rodman Mountains, Bagdad, Essex, Fenner, Bannock and Hommer Mountain			
1060964	Regional Environmental Consultants	Norwood, Richard H	1980	Cultural Resource Survey for a Portion of the Earp to Johnson Valley, California, Enduro Racecourse Route	Bagdad, Amboy Crater Lead Mountain, Bristol Lake NW, Bristol Lake SW, Bristol Lake, Cadiz Lake, Cadiz valley, Iron Mountains, Silver Bell Mine,	Positive Archaeological Survey		X

Table 5.7-1
Previously Conducted Cultural Resources Investigations within the Solar One APE and One-Mile Search Radius

Survey Report Number	Company	Author	Date	Report Title	Quadrangle	Investigation Type	In APE	In 1- mile research radius
					Sunshine Peak, Lavic Lake, Ludlow, Ludlow SE, Troy Lake, and Cady Mountains			
1060965	Unknown	Musser, Ruth A.	1980	A Cultural Resource Inventory: Johnson Valley to Parker Motorcycle Race – The Public Comment Alternative	Bagdad, ,Amboy Crater, Lead Mountain, Bristol Lake NW, Bristol Lake SW, Bristol Lake, Cadiz Lake, Cadiz Valley, Iron Mountains, Silver Bell Mine, Sunshine Peak, Lavis Lake, Ludlow, Ludlow SE, Troy Lake and Cady Mountains	Negative Archaeological Findings		X
1061449	E.R. of Applied Conservation Technology, Inc.	Well, Edward B., Weisbord, Jill and Blakely	1964	Cultural Resources Literature Research, Records Check and Sample Field Survey for the California Portion of the Celeron/All American Pipeline Project.	Newberry Springs, Troy Lake, Kramer, Hawes, Barstow, Daggett, Cady Mountains, Lavic, Ludlow,	Positive Archaeological Survey	X	X

Table 5.7-1
Previously Conducted Cultural Resources Investigations within the Solar One APE and One-Mile Search Radius

Survey Report Number	Company	Author	Date	Report Title	Quadrangle	Investigation Type	In APE	In 1- mile research radius
					Iron Mountains, Bagdad, Cadiz, Danby, Essex, Millligan, Cadiz Lake, and Rice			
1061979	New Mexico University	Fagan Bryan *et al.*	1989	Cultural Resource Report for the All American Pipeline Project: Santa Barbara, California to McCarney Texas and Additional Areas to the East – Along the Central Pipeline Route Texas	Leuhman Ridge, Kramer Junction, Kramer Hills, Twelve Gauge Lake, Hinkley, Barstow, Nebo, Daggett, Minneola, Newberry Springs, Troy Lake, Hector, Sleeping Beauty, Lavic Lake, Ludlow, Ash Hill, Ludlow SE, Bagdad, Amboy Crater, Amboy, Cadiz, Cadiz Summit, Cadiz Lake NW, Cadiz	Positive Archaeological Survey	X	X

Table 5.7-1
Previously Conducted Cultural Resources Investigations within the Solar One APE and One-Mile Search Radius

Survey Report Number	Company	Author	Date	Report Title	Quadrangle	Investigation Type	In APE	In 1- mile research radius
					Lake NE, Chubbuck, Milligan, East of Milligan, Danby Lake, Sablon and Arica Mountains			
1062220	Bureau of Land Management	BLM	1978	Archaeological Sites of the California Desert Area (Owlshead, Amargosa, Mojave Basin Planning Unit, Phase III): Archaeological Sample Unit Records.	Avawatz Pass, Silurian Hill, Baker, Red Pass Lake, Soda Lake, Cave Mountain, Lavic, Ludlow and Bagdad	Positive Archaeological Survey	X	X
1062234	California State University, Bakersfield – Cultural Resource Facility	Yohe II, Robert M. and Sutton, Mark Q.	1992	An Archaeological Assessment of Eight Alternative Access Routes Into the Proposed Hidden Valley Hazardous Waste Disposal Facility, San Bernardino County	Cady Mountains	Positive Archaeological Survey	X	X
1062330		Simpson, Ruth D.	1964	The Archaeological Survey of Pleistocene Manix Lake (and Early Lithic Horizon)	Yermo, Harvard Hill, Manix, Troy Lake, Alvord Mountain, Cave Mountain, Lane Mountain	Positive Archaeological Survey		X

Table 5.7-1
Previously Conducted Cultural Resources Investigations within the Solar One APE and One-Mile Search Radius

Survey Report Number	Company	Author	Date	Report Title	Quadrangle	Investigation Type	In APE	In 1- mile research radius
1062388	Far Western Anthropological Research Group	McGuire, Kelly R.	1990	A Cultural Resources Inventory and Limited Evaluation of the Proposed Mojave Pipeline Corridor in California and Arizona	Topock, Whale Mountain, Monumental Pass, Stepladder Mountains, Stepladder Mountains NW, Little Paiute Mountains, Essex, Danby, Skeleton Pass, Cadiz Summit, Cadiz, Amboy, Amboy Crater, Bagdad SW, Ludlow SE, Ash Hill, Ludlow, Lavic Lake, Sleeping Beauty, Hector, Troy Lake, Newberry Springs, Minneola, Daggett, Barstow SE, Hodge, Hinkley, Twelve Gauge Lake, Kramer Hills, Kramer	Positive Archaeological Survey	X	X

Table 5.7-1
Previously Conducted Cultural Resources Investigations within the Solar One APE and One-Mile Search Radius

Survey Report Number	Company	Author	Date	Report Title	Quadrangle	Investigation Type	In APE	In 1- mile research radius
					Junction and Leuhman Ridge			
1062399	Far Western Anthropological Research Group	McGuire, Kelly R. and Glover, Leslie	1991	A Cultural Resource Inventory of a Proposed Natural Gas Pipeline Corridor From Adelanto to Ward Valley, San Bernardo County , California	Little Paiute Mountains, Essex, Danby, Castle Dome, Van Winckle Wash, Brown Buttes, East of Siberia, Siberia, Ash Hill, Ludlow, Lavic Lake, Sleeping Beauty, Hector, Newberry Springs, Camp Rock Mine, Ord Mountain, West Ord Mountain, Stoddard Well, Turtle Valley, Hodge, Barstow SE, Apple Valley North, Victorville, and Adelanto	Positive Archaeological Survey	X	X

Table 5.7-1
Previously Conducted Cultural Resources Investigations within the Solar One APE and One-Mile Search Radius

Survey Report Number	Company	Author	Date	Report Title	Quadrangle	Investigation Type	In APE	In 1- mile research radius
1062406	California State University, Bakersfield – Cultural Resource Facility	Osborne, Richard H.	1991	Addendum to Archaeological Investigation of Hidden Valley Hazardous Waste Facility Access Route From Highway 40 to Hector Siding	Hector	Positive Archaeological Survey	X	X
1062710	Dames and Moore	Apple McCorckle, Rebecca and Liliburn, Lori	1993	Cultural Resources for the Fort Cady Boric Acid Mining and Processing Facility Newberry Springs, California	Hector, Sleeping Beauty, and Sunshine Peak	Positive Archaeological Survey		X
1062808	Southern California Gas Company	Padon, Beth and Breece, Ladurel	1993	Archaeological Assessment, Kern Mojave Pipeline, San Bernardino County, Ca	Hector	Positive Archaeological Survey		
1062862	Dames and Moore	Apple McCorckle, Rebecca	1993	Cultural Resources Testing and Evaluation Report for the Fort Cady Boric Acid Mining and Processing Facility, Newberry Springs - CA	Hector, Lavic Lake, Sleeping Beauty, Sunshine Peak and Troy Lake	Positive Archaeological Survey	X	
1063630	Tetra-Tech	Budinger, Fred	2001	An Archaeological Assessment of the Proposed Verizon Wireless Newberry Springs Unnamed Cellular Telecommunications Site to be Located South of National Trails Highway (Old Rte 66) and West of Hector Off-Ramp	Hector	Negative Archaeological Survey		X

Table 5.7-1
Previously Conducted Cultural Resources Investigations within the Solar One APE and One-Mile Search Radius

Survey Report Number	Company	Author	Date	Report Title	Quadrangle	Investigation Type	In APE	In 1- mile research radius
				From Hwy 40				
1063631	ACS Limited	Clark, Caven	1998	Archaeological Survey at the Hector Meter Station	Hector	Positive Archaeological Survey	X	X
On File with BLM	Environmental Planning Group	Rowe, Robert, A.	2006	Results of Cultural Records Search in Support of the Proposed Solar One Power Generating Facility, Hector, San Bernardino County, California	Sleeping Beauty, Broadwell Lake	Positive Records Search	X	X

The following paragraphs describe in further detail the contents of the technical reports for the previously conducted investigations.

Report # 1060038
The Manix Lake Archaeological Survey
Ruth D. Simpson

Article published in 1958 in the Masterkey Journal of the Southwest Museum. The article addresses archaeological fieldwork done during the late 1950s at Pleistocene Manix Lake basin with the intent to better understand man's occupation of Western America during glacial and early post-glacial periods

Report # 1060064
An Archaeological Survey of Troy Lake, San Bernardino County
Ruth D. Simpson

Report provides information on Troy Lake Located in central San Bernardino County and is part of the Great Basin Area. The report was written with the intention of providing helpful data on the Great Basin Area to fieldworkers, and assist in establishing a uniform terminology for the region.

Report # 1060874

An Archaeological sampling of the proposed Allen-Warner Valley Energy System, western transmission line corridors, Mojave Desert, Los Angeles and San Bernardino Counties, California, and Clark County, Nevada

James P. Barkers et al.

Report describes the results of an archaeological survey and testing by random stratified/non-stratified sampling design, for a series of proposed transmission line corridors and their alternatives in the Mojave Desert of California and Nevada. The areas examined comprise portions of the proposed Allen-Warner Valley Energy System, Western Transmission Line Corridors, of the Southern California Edison (SCE), Rosemead, California. The archaeological survey ranged from Eldorado Substation near Boulder City, Nevada to the vicinity of Vincent Substation near Palmdale, California.

Report # 1061449

Cultural Resources Literature Search, records Check and Sample Field Survey for the California Portion of the Celeron/All American Pipeline Project. Technical Appendix to: Draft Environmental Impact Report/Environmental Impact Statement Proposed Celeron/All American and Getty Pipeline Projects

Edward B. Weil, Ph.D et al.

Report was elaborated in support of the preparation of a combined Environmental Impact Report (EIR) / Environmental Impact Statement (EIS) for the Getty and Celeron/All American Pipeline Project. The reports intent was to determine the nature of cultural resource sensitivities potentially impacted by the construction and operation of the proposed pipeline facilities, and documentation of the research and heritage preservation concerns in the project area. This documentation included California, Texas, Arizona and New Mexico.

Report # 1061940

A Cultural resource Inventory for the Proposed Hidden Valley Hazardous Waste Disposal Facility, San Bernardino County, California

Mark Q. Sutton and Robert E. Parr

Report was written to complete the cultural resources section for the proposed Specified Hazardous Waste Facility (SHWF) in Hidden Valley, Cady Mountains, San Bernardino County, California Environmental Impact Report (EIR). The project was viewed as an opportunity to examine the cultural resources within the small valley that encompasses several ecozones. Sutton was interested in collecting information regarding the settlement/subsistence system(s) operating within the valley, and the relationships between other systems based elsewhere.

Report # 1061979

Cultural resources report for the All American Pipeline Project: Santa Barbara, California to McCamey, Texas and Additional Areas to the East along the Central Pipeline Route in Texas

New Mexico State University

The report encompasses results of the survey done for the All American Pipeline Project. The surface survey covered the length of the line between the proposed sites of AAPL's Las Flores and Gaviota pump stations along coastal California in Santa Barbara County, passing through southern Arizona, New Mexico, and into west Texas north of El Paso. The report exposes innovative approaches to cultural resources management, sampling and report writing used by combining various anthropological disciplines.

Report # 1062234

An Archaeological Assessment of Eight Alternative Access Routes into the Proposed Hidden Valley Hazardous Waste Disposal Facility, San Bernardino County, California

Robert M. Yohe II and Mark Q. Sutton

The report was written as part of an Environmental Impact Report for a proposed Specified Hazardous Waste Facility (SHWF) in Hidden Valley, Cady Mountains, San Bernardino County, California. The report reflects the results of the archaeological assessment of 8 proposed access routes into the SHWF and includes recommendations for further work.

Report # 1062388

A Cultural Resources Inventory and Limited Evaluation of the Proposed Mojave Pipeline Corridor in California and Arizona.

Kelly R. McGuire

Report describes the results of a cultural resources inventory and initial evaluation of a 387-mile proposed Mojave natural gas pipeline corridor which traverses portions of Kern and San Bernardino Counties in California and Mohave County in Arizona.

Report # 1062399

A Cultural Resource Inventory of a Proposed Natural Gas Pipeline Corridor from Adelanto to Ward Valley, San Bernardino County, California

Kelly R. McGuire and Leslie Glover

Report describes the results of a cultural resources inventory of a proposed Southern California Gas Company (SoCal) 204 mile natural gas pipeline corridor in San Bernardino County, California. The report states that after the initial fieldwork was completed the pipeline project was canceled and as a result further cultural resources investigations in the area were halted.

Report # 1062701

An Archaeological Survey of Hidden Valley, Central Mojave Desert, California

Mark Q. Sutton and Robert E. Parr

Paper presented at the 1989 SCA Fall Data Sharing Meeting, Santa Barbara. The intention of the paper was to expose the results of the cultural resources investigation conducted in Hidden Valley in October 1989. Although the survey data and subsequent investigations were limited, Sutton was able to provide a synchronic view of the utilization of an upland valley in the central Mojave Desert.

Report # 1062808

Archaeological Assessment Kern Mojave Pipeline, San Bernardino County, California

Beth Padon, M.S. and Laurel Breece, M.A.

Report presenting results of an archival review and intensive pedestrian survey of the proposed Kern Mojave Pipeline, located 32 miles of the City of Barstow, San Bernardino County, California. During survey no intact cultural resources were found.

Report # 1063630

An Archaeological Assessment of the Proposed Verizon Wireless Newberry Springs Unmanned Cellular Telecommunications site to be Located South of Nationals Trails Highway (Old Route 66) and West of Hector Off Ramp from Interstate 40, San Bernardino County, California.

Fred Budinger

Report presenting results of an archaeological assessment of a proposed Verizon Wireless, Inc. unmanned cellular telecommunications site. The report states that there were negative findings in the area.

Report # 1063631

Archaeological Survey at the Hector Meter Station, San Bernardino County, California

Caven P. Clark

Report presents results of an archaeological survey of a proposed expansion of the Hector Meter Station of the El Paso Natural Gas Company (EPNG) Mojave Pipeline. The report states that the survey disclosed the presence of a small number of prehistoric lithic artifacts in a heavily to moderately disturbed area.

Report# 1060047

Archaeological Survey of the Eastern Calico Mountains

Ruth D. Simpson

Article published in 1960 in the Masterkey Journal of the Southwest Museum. The article is a continuation of the article written during 1958 entitled "The Manix Lake Archaeological Survey". In this article the author describes surveys done in the Calico Mountains during 1960 as well as artifact descriptions.

Report # 1062862

Cultural Resources Testing and Evaluation Report for the Fort Cady Boric Acid Mining and Processing Facility Newberry Springs, California

Rebecca McCorkle Apple

Report is part of an Environmental Impact Report (EIR) / Environmental Impact Statement (EIS) for a proposed mine and processing structures for Boric acid. A cultural resources survey was conducted to provide an inventory of resources potentially affected by the project. A testing and evaluation program was designed and approved by the BLM to mitigate the sites found within the project area using the Sparse Lithic Scatter Program (CARIDAP).

Report on file with BLM

Results of Cultural Records Search in Support of the Proposed Solar One Power Generating Facility, Hector, San Bernardino County, California.

Robert A. Rowe RPA

In 2006, SES proposed the Solar One Power Generation Facility. The original project proposed two sitting locations totaling 51, 520 acres; one of which was considered an alternative siting location. The scope of the report was to review and identify prior investigations and previously recorded sites located within a 1-mile radius of the project area. The record search identified 20 previously conducted studies in the area, 38 previously recorded sites and 34 previously identified isolates within the project area and 1-mile radius. Based on the record search results, Environmental Research Group recommended a field survey be conducted by qualified professional for historic and prehistoric resources within the portions of the project areas that had not been previously been surveyed.

5.7.10.1.2 Previously Recorded Cultural Resources

A total of 79 cultural resources have been previously recorded in the Solar One APE and one-mile search radius (Table 5.7-2 – for figures refer to Appendix Z – Confidential Technical Report Appendix C). Forty-two of these previously recorded resources are archaeological sites, 28 are prehistoric isolates, and nine are historic resources (two of which are built environment). Sixteen of the cultural resources occur within the Solar One APE (one isolate, 12 prehistoric sites, and 13 historic sites), 63 occur within the 1-mile search radius (27 isolates, 58 prehistoric, and four historic), and three of occur both the Solar One APE and 1-mile search radius (one prehistoric site, and two historic sites).

Two of these sites, SBR-2910H and SBR-6693H, are listed as eligible for the National Register Historic Places (NRHP). SBR-2910H is the Old National Trails Highway 66/Route 66, which varies from a graded dirt road to a two-lane paved road. Historic trash scatters are found sporadically along the road consisting of historic glass, cans, signs, and car parts. This highway represents one of the earliest trans-continental automobile routes. Between 1990 and 1998 portions of this site were given status codes 2S2 (individual property determined eligible for the NR [National Register] by a consensus through Section 106 process; listed in the CR [California Register]) and 2S (individual property determined eligible for the NR by the Keeper; listed in the CR.). This resource is within the 0.5 mile historic architecture APE for Solar One – Phase II.

SBR-6693H is the railroad line that was originally built in 1883 for the Atlantic and Pacific Railroad Company. From 1890, the railroad was operated by the Atchinson, Topeka & Santa Fe Railroad until its merger in 1996 with the Burlington Northern Santa Fe Railroad. In addition to the railroad track, associated historical artifacts include glass, metal, track and train parts, and railroad tableware. Between 1993 and 2002 portions of this site have been given status codes 2S2 (individual property determined eligible for the NR by a consensus through Section 106 process; listed in the CR) and 6Y (determined ineligible for NR by consensus through Section 106 process, not evaluated for CR or Local Listing). SBR-6693H bisects the Solar One Project APE and is located within the historic architecture APE for both phases and within the Pisgah Triangle study area.

Of the previous investigations, much was completed before the advent/availability of global position system (GPS) data collection and standardized archaeological data-recording processes. Much of the previously recorded information is unevaluated, the site description is poor, and locational information tends to be inaccurate or unavailable.

The following tables summarize the records search:

Table 5.7-2
Previously Recorded Cultural Resources within the Solar One APE and One-Mile Search Radius

Primary #	Trinomial	Cultural Resource Type	Cultural Resource Description	In APE	Within the 1 mile research radius	Latest Update
36-061410		Prehistoric	Black on white pottery sherd		X	Unknown
36-061415		Prehistoric	Isolated jasper flake		X	1990
36-061416		Prehistoric	Two isolated chalcedony flakes		X	1990
36-061417		Prehistoric	Isolated chalcedony flake		X	1990
36-061420		Prehistoric	Isolated chalcedony flake and isolated rhyolite flake		X	Unknown
36-061421		Prehistoric	Isolated jasper flake		X	1991
36-061423		Prehistoric	Isolated cryptocrystalline flake		X	1990
36-061424		Prehistoric	Isolated white cryptocrystalline flake		X	1990
36-061425		Prehistoric	Isolated white cryptocrystalline flake		X	1990
36-061426		Prehistoric	Isolated red cryptocrystalline flakes		X	1990
36-061427		Prehistoric	One isolated red cryptocrystalline flake tool and one red cryptocrystalline flake		X	1990
36-061428		Prehistoric	Two isolated cryptocrystalline flakes		X	1990
36-061429		Prehistoric	Isolated cryptocrystalline silicate flake		X	1990
36-061430		Prehistoric	Isolated cryptocrystalline silicate flake		X	1990
36-061431		Prehistoric	Isolated cryptocrystalline silicate flake		X	1990
36-061432		Prehistoric	Isolated cryptocrystalline silicate flake		X	1990
36-061433		Prehistoric	Two isolated cryptocrystalline silicate flakes		X	1990
36-061434		Prehistoric	Isolated cryptocrystalline silicate flake		X	1990
36-061435		Prehistoric	Isolated cryptocrystalline silicate flake		X	1990
36-061436		Prehistoric	Isolated cryptocrystalline silicate flake		X	1990

Table 5.7-2
Previously Recorded Cultural Resources within the Solar One APE and One-Mile Search Radius

Primary #	Trinomial	Cultural Resource Type	Cultural Resource Description	In APE	Within the 1 mile research radius	Latest Update
36-061459		Prehistoric	3 cryptocrystalline flakes		X	1991
36-061460		Prehistoric	One multidirectional core and 1 flake of same material		X	1991
36-061461		Prehistoric	One red cryptocrystalline flake		X	1991
36-064406		Prehistoric	Isolated chert flake and one piece of angular waste		X	2001
36-064407		Prehistoric	Two isolated chalcedony flakes	X		2001
36-064408		Prehistoric	Isolated red jasper flake fragment		X	2001
36-064409		Prehistoric	Isolated agate bifacial core		X	2001
36-064410		Prehistoric	One isolated red jasper flake and a second flake with dorsal scars		X	2001
	CA-10649H	Prehistoric	Small lithic test and quarry area with flakes and one core	X		2001
36-001585	CA-SBR-1585	Prehistoric	Also known as EM-266, this is a Petroglyph Site		X	1976
	CA-SBR-1793H	Prehistoric	Pottery sherds, awl, 2 bifaces		X	1963
	CA-SBR-1889	Prehistoric	Lithic scatter containing mutates, projectile points and debitage		X	1969
	CA-SBR-1893	Prehistoric	Also known as SBCM 674, this site consists of 2 projectile points, scrapers flakes and bone which were collected at time of recordation	X		1963
	CA-SBR-1905	Prehistoric	Jasper quarry with sparse scatters consists of flakes, bifaces and scrapers		X	1980
	CA-SBR-1907	Prehistoric	Large quarry area containing debitage, cores and bifaces		X	1990
	CA-SBR-1908	Prehistoric	Low density; sparse cobble testing/ quarry area consisting	X		1979

Table 5.7-2
Previously Recorded Cultural Resources within the Solar One APE and One-Mile Search Radius

Primary #	Trinomial	Cultural Resource Type	Cultural Resource Description	In APE	Within the 1 mile research radius	Latest Update
			of cryptocrystalline silicate, basalt and rhyolite materials.			
	CA-SBR-2330H	Historic	Lavic Chinese Labor Camp, Glasgow pottery along with hearths was recorded next to the Santa Fe Railroad near Lavic Siding.		X	1980
	CA-SBR-2910H	Historic	Also known as National Old Trails Highway 66/ SM364. This is an early 20th century two lane paved road at Mile Post 183 where it becomes a graded dirt road.		X	2001
	CA-SBR-3515	Historic/ Prehistoric	Two rock rings, it was not determined if they were historic or prehistoric		X	1978
	CA-SBR-3516	Prehistoric/Historic	Lithic quarry site containing flakes and cores of chert material and historic trash scatter		X	1991
	CA-SBR-3876	Prehistoric	Two rock circles made of volcanic basalt		X	1979
	CA-SBR-4307	Prehistoric	Several lithic scatters		X	1980
	CA-SBR-4308	Prehistoric	Two lithic reduction stations that contain flakes and cores		X	1980
	CA-SBR-4309	Prehistoric	Lithic scatter with a lithic reduction station. Possible basalt and andesite tools present on site.		X	1980
	CA-SBR-4405H	Historic	A booth and cargo loading platform located where the railroad splits.		X	
	CA-SBR-4558H	Historic	Also known as SBCM 4918, This site is a 1930s and 1940s manganese mining area containing a galvanized steel structure, mill tailings, mine and historic trash scatters	X	X	1979
	CA-SBR-4681	Prehistoric	Lithic scatter	X		1980
	CA-SBR-5600	Prehistoric	Lithic reduction station	X		1980

Table 5.7-2
Previously Recorded Cultural Resources within the Solar One APE and One-Mile Search Radius

Primary #	Trinomial	Cultural Resource Type	Cultural Resource Description	In APE	Within the 1 mile research radius	Latest Update
	CA-SBR-5598	Prehistoric	Large cobble test/quarry area		X	1991
	CA-SBR-5599	Prehistoric	Lithic scatter and rock rings		X	1980
	CA-SBR-5794	Prehistoric	Cobble quarrying and lithic reduction area		X	1989

Table 5.7-2
Previously Recorded Cultural Resources within the Solar One APE and One-Mile Search Radius

Primary #	Trinomial	Cultural Resource Type	Cultural Resource Description	In APE	Within the 1 mile research radius	Latest Update
	CA-SBR-5795	Prehistoric	Lithic scatter originally containing 100s of flakes, several biface fragments and cores		X	2001
	CA-SBR-5796	Prehistoric	Low density lithic scatter containing flakes and cores	X		2001
	CA-SBR-5797	Prehistoric	Low density lithic scatter with dozens of flakes and cores		X	2001
	CA-SBR-6511	Prehistoric	Very large low density lithic scatter containing debitage and shatter	X		1989
	CA-SBR-6512	Prehistoric	Also known as MP-26, this is a small low density lithic scatter that contains debitage	X		1989
	CA-SBR-6513	Prehistoric	Also known as MP-27, this is a single segregated lithic reduction locus containing approximately 15 felsite flakes total	X		1989
	CA-SBR-6517	Prehistoric	Small flake scatter with one core and 8 flakes		X	1989
	CA-SBR-6518	Prehistoric	Small cobble test and quarry area with 2 Segregated Reduction Loci and debitage		X	1989
	CA-SBR-6519	Prehistoric	A single Segregated Reduction Locus made up of approx. 4 flakes		X	1989
	CA-SBR-6520	Prehistoric	Small cobble test and quarry area with one Segregated Reduction locus and debitage	X		1989
	CA-SBR-6521	Prehistoric	Low density cobble test and quarry area with debitage, cores, bifaces and blanks	X		1989
	CA-SBR-6522/H	Prehistoric and Historic	Low density cobble test and quarry area with debitage, cores, bifaces and blanks		X	1989
	CA-SBR-6525	Prehistoric	Also known as MP-84, this is a low density lithic scatter		X	1989

Table 5.7-2
Previously Recorded Cultural Resources within the Solar One APE and One-Mile Search Radius

Primary #	Trinomial	Cultural Resource Type	Cultural Resource Description	In APE	Within the 1 mile research radius	Latest Update
			that contains 1 lithic reduction locus flakes and debitage			
	CA-SBR-6526	Prehistoric	Also known as MP-85, this site contains 2 adjacent lithic reduction loci and flakes		X	1989

Table 5.7-2
Previously Recorded Cultural Resources within the Solar One APE and One-Mile Search Radius

Primary #	Trinomial	Cultural Resource Type	Cultural Resource Description	In APE	Within the 1 mile research radius	Latest Update
	CA-SBR-6527	Prehistoric	Also known as MP-86, this site is a small low density flaked stone scatter		X	1989
	CA-SBR-6528	Prehistoric	Also known as MP-87, this is a small density lithic scatter	X		1989
	CA-SBR-6693H-NRHP	Historic	Railroad Line built in 1883 for the Atlantic and Pacific Railroad Co., associated artifacts include track and train parts, railroad tableware, and insulator glass fragments	X	X	2001
	CA-SBR-6786	Prehistoric	Cobble quarrying area comprised of approx. 200 flakes and 4 cores		X	1990
	CA-SBR-6836	Prehistoric	Small lithic scatter containing approx. 6 jasper flakes		X	1991
	CA-SBR-6895	Prehistoric	Single Segregated Reduction Locus containing flakes		X	1990
	CA-SBR-6896	Prehistoric	Small, sparse lithic scatter consisting of 13 flakes, no tools		X	1990
	CA-SBR-6897	Prehistoric	Small moderately dense lithic scatter consisting of approx. 20 cryptocrystalline flakes.		X	1990
	CA-SBR-6898	Prehistoric	Cryptocrystalline lithic scatter with over 50 flakes and 4 bifaces.		X	1990
	CA-SBR-7114	Prehistoric	Moderately dense lithic scatter with 51 cryptocrystalline flakes representing all stages of reduction.		X	1991
	CA-SBR-7115	Prehistoric	Very sparse lithic scatter along lava ridges		X	1991
	CA-SBR-7116	Prehistoric	Possible pot hunter deposit, several flaked litchis in small cluster		X	1991

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Of the 49 previously recorded sites, 14 are found within the project area; CA-10649H, CA-SBR-1896, CA-SBR-1908, CA-SBR-4558H, CA-SBR-4681, CA-SBR-5600, CA-SBR-5796, CA-SBR-6511, CA-SBR-6512, CA-SBR-6513, CA-SBR-6520, CA-SBR-6521, CA-SBR-6528, CA-SBR-6693H-NRHP.

CA-10649H is a very small prehistoric lithic test quarry/scatter containing at least four chert/jasper flakes, 1 white chert core and 1 volcanic core. The site is located atop a sandy clay and disturbed desert pavement terrace with an open exposure and 0° degree slope. The site was recorded by Stephanie Rose and Iain Berdzar of Tierra Environmental Services in February 2001.

CA-SBR-1896 is a prehistoric lithic scatter containing fire stones and projectile points. The site was recorded by Lyle Richards, date unknown.

CA-SBR-1908 is a very large low density prehistoric cobble test/quarry area, measuring 115m N/S x 95m E/W. Raw materials consist of cryptocrystalline silicate, basalt and rhyolite materials. The site is most dense at the top of the hill at mile post 157. Site was originally recorded in 1965 by an unknown person and updated by J. Berg of Far Western Anthropological research Group, Inc. in November 1989. During the survey done by Far Western the site was tested. A total of eight 25x50cm test units were excavated finding only one flake in STP#2. In February 2001 the site was updated by J. Dietler and J. Toenjes of Tierra Environmental Services. The condition of the site was considered the same as 1989 and no further description was provided.

CA-SBR-4558H also known as SBCM 4918. This is a 1930s and 1940s historic manganese mining area containing a galvanized steel structure, mill tailings, mine and historic trash. The site is situated on the south side of the Cady Mountains and approximately 5 miles north of Pisgah along the Santa Fe Railroad. The site was by R. Brooks of BLM during October 1979.

CA-SBR-4681 is a prehistoric lithic scatter located atop an undisturbed alluvial bench. Lithic materials consist of a few relatively fresh basalt flakes and cryptocrystalline silicate jasper flakes. Some of the weathered basalt artifacts resemble the “Malpais” Complex. The site was recorded by Hardaker and Musser of BLM in January 1980.

CA-SBR-5600 is a prehistoric lithic reduction station located atop a desert pavement knoll. Raw materials consist of cryptocrystalline silicate (jasper) and basalt. According to recorders the site has two components; one cryptocrystalline silicate jasper flaking station, and another one consisting of basalt flakes with no evidence of ware. The site was recorded by Hardaker and Musser of BLM in January 1980.

CA-SBR-5796 is a prehistoric low density lithic scatter located in a bajada bisected by an alluvial wash. The site was originally recorded by J.Wollin of the New Mexico State University in 1985. During the survey there was lithic surface collection and testing; artifacts included dozens of flakes, mostly primary and several cores. Materials included cryptocrystalline silicate (jasper, chert and chalcedony) and basalt. The site was updated in February 2001 by J. Dietler and J. Toenjes of Tierra Environmental Services. During the update a lithic scatter was observed.

CA-SBR-6511 is prehistoric low density lithic scatter measuring 40m E/W x 50m N/S. The site situated on a large alluvial plain in an area of moderately consolidated desert pavement mixed with areas of loose sandy soil. Materials include cryptocrystalline silicate and rhyolite. The site was tested; eight 25x50 test units were excavated in the portion of the site which will be

impacted by the Mojave Pipeline. The site was recorded by L.Glover et al. of Far Western Anthropological research Group, Inc. in November 1989.

CA-SBR-6512 is a prehistoric small density lithic scatter of mixed materials that are situated on the slope of a small sand dune which was built up along the side of a small lave flow. The site measures 20m E/W x 11m N/S. Raw materials include cryptocrystalline silicate, basalt and rhyolite. The site was recorded by L.Glover et al. of Far Western Anthropological research Group, Inc. in November 1989.

CA-SBR-6513 is a prehistoric single segregated reduction locus located on unconsolidated desert pavement at the base of a small lava flow, that measures 2.4m E/W x 1.4m N/S. The SRL consists of approximately 15 felsite flakes. No tools are associated with the site. The site was recorded by L.Glover et al. of Far Western Anthropological research Group, Inc. in November 1989.

CA-SBR-6520 is a prehistoric small low density cobble test/quarry area consisting of one segregated reduction locus, one cryptocrystalline silicate core and approximately 16 additional pieces of debitage. The site measures 67m NW/SE x 20m SW/NE. Raw materials are cryptocrystalline silicate and basalt. The site was recorded by L.Glover et al. of Far Western Anthropological research Group, Inc. in November 1989.

CA-SBR-6521 is a prehistoric low density desert pavement cobble test/quarry area site, measuring 135m N/S x 70m E/W. Raw materials consist of cryptocrystalline silicate, basalt and rhyolite. The site is essentially an area of primary reduction with a few first stage bifaces. The site was tested; 4 25x50cm test units were excavated at this site. Artifacts found within the site consist of 4 bifaces, 4 cores and 1 flake; the debitage mostly from reducing on site cobbles in pavement formation. No artifacts were collected.

The site was recorded by L.Glover et al. of Far Western Anthropological research Group, Inc. in November 1989

CA-SBR-6528 is a prehistoric small low density lithic scatter consisting of ten flakes of reddish/brown/purple cryptocrystalline silicate. The site measures 17m E/W x 14m N/S. Tools found within the site consist of one bifacial core, one multi-directional cryptocrystalline silicate core and debitage. The site was recorded by Mikkelsen et al. of Far Western Anthropological research Group, Inc. in November 1989.

CA-SBR-6693H-NRHP was originally recorded by Michael Lerch in 1990, who describes the railroad as having originally been built “in 1883 for the Atlantic and Pacific Railroad Co. by Southern Pacific, and subsequently purchased by the Atchison, Topeka & Santa Fe railroad, which has operated it since 1890. (…) In 2001 Tierra Environmental Services updated the site stating that the railroad is currently operated by the Burlington Northern and Santa Fe Railroad Co. A wooden phone/telegraph line with two cross pieces with glass insulators and two wires paralleling the tracks were found. Other artifacts were found associated with the railroad such as track and train parts, railroad tableware, and insulator glass fragments.

5.7.10.2 Class III Intensive Field Survey Results

Survey of the Project APE was conducted between August 4, 2008 and October 31, 2008. Rachael Nixon, URS Principal Investigator, directed between four and five crews, each consisting of four to five archaeologist during the Class III Field Survey. The pedestrian survey for the Class III Intensive Field Survey covered 8,230 acres within the Solar One (Phase I and 2) APE as well as an additional 200-feet beyond the APE (Figure 1.0-1 – Appendix Z Confidential Technical Report). The principal survey method consisted of a systematic walk-over in parallel transect intervals no greater than 15 meters. Areas of steep terrain where access was not feasible due to unsafe/unstable surfaces were not surveyed. Such areas are few and are found along the northern Project boundary towards the eastern side of the Project in the Cady Mountains. Any areas with the potential for cultural resources were investigated (e.g., caves and ridge tops, and steep drainage cuts). The survey transects extended across the entire horizontal extent of the archaeological APE. Survey crews were guided by Trimble XH sub-meter global positioning system (GPS) units uploaded with records search, township, built environment features, and project-specific boundary data. Individual crews were assigned portions of sections for survey. Garmin Model 150 GPS units were carried as backups and as communication devices.

The guidelines applied to field survey and recordation of cultural resources within the Project APE were provided by BLM archaeologist Jim Shearer. The guidelines provided that archaeological sites consisted of five or more historic period artifacts or prehistoric period artifacts with a tool (six or more artifacts) within 30 meters of each other. Groups of five or fewer prehistoric artifacts (without a tool) within 30 meters of each other were recorded as isolated finds. Individual and groups of less than five historic period artifacts were not recorded.

Site containing higher concentrations of artifacts over a large area were assigned individual Locus numbers. Loci were assigned for areas within sites with higher artifact concentrations. A locus was assigned to concentrations of more than six artifacts within a discrete location. Discrete locations were defined as single reduction loci, multiple single reduction loci, and/or lithic scatter concentrations. In the case of multi-component sites, historic and prehistoric components were assigned individual loci when possible.

From previous surveys on similar terrain, it was inferred that archaeological sites would be found on areas of desert pavement. For the purpose of this survey desert pavement was defined as a desert surface that is covered with closely packed, interlocking angular or rounded rock fragments of pebble and cobble size. Within the Project Area, and other areas of the desert, a portion of the cobble constituents of desert pavement are of cryptocrystalline silicate (chalcedony, jasper, others) materials used by Native Americans for the production of flaked stone tools. As such, the correlation of these surfaces with the archaeological materials contained therein may be informative. In addition, the pavement stabilization level is directly correlated with the likelihood of the matrix containing buried deposits, i.e., the more visible sediments the more likely the presence of buried archaeological deposits. The following is an elementary subdivision of desert pavements used to classify variability in surfaces.

Partially stabilized pavement has 30 percent or greater of sediments visible.

Moderately stabilized pavement has 10 to 30 percent of sediments visible.

Stabilized pavement has pavement 0 to 10 percent of sediments visible.

The California Archaeological Resource Identification and Data Acquisition Program: Sparse Lithic Scatters (CARIDAP) was applied in the preliminary field surface identification and management recommendation with regards to lithic scatters identified within the Solar One APE and 200-foot buffer (Jackson *et al.,* 1988). No subsurface testing or data recovery was conducted during the Class III Intensive Field Survey. The CARIDAP classification as a sparse lithic scatter archaeological site is that it:

1. contains only flaked-stone and lack other classes of archaeological materials (*e.g.,* groundstone, fire affected rock, bone, or shellfish remains, pottery);

2. appears to lack a substantial subsurface deposit (based on surface observations only); and

3. exhibits surface densities equal to or less than three flaked-stone items per square meter.

These guidelines were applied throughout the entire Class III Intensive Field Survey for the Solar One APE. No artifacts were collected during the Class III Field Survey.

Overall surface visibility was good to excellent across the Project APE and 200-foot buffer. Visibility ranged from 60-100 percent, and averaged approximately 80 percent of the ground surface; however, areas with greater visibility were thoroughly inspected for cultural materials to ensure adequate coverage for resource discovery. Evidence of disturbances within and surrounding the APE include numerous rodent burrows, flash flooding, mining activities, livestock trampling, OHV use, and access roads.

The URS archaeological team identified a total 383 archaeological resources: 242 isolates and 141 archaeological sites (nine of which were updates) within the Solar One APE and 200 Foot buffer (Figures 6.3-1 and 6.3.4-1 Appendix Z Confidential Technical Report – Confidential Appendix A, B, and C). Of the 141 new and updated archaeological sites, 126 are prehistoric, 11 historic, and four multi component. Based on surface observations it appears that of the newly recorded archaeological sites and of the previously recorded archaeological sites 108 may be eligible for NRHP and/or CRHR. Evaluation and management recommendations for these resources are provided in Section 8, below. Twenty three (23) of the archaeological resources identified are recommended not eligible under NRHP and CRHP, no further management is recommended. See evaluations sections below.

5.7.10.2.1 Archaeological Sites within the Solar One APE

Phase I Area

A total of 16 archaeological sites were identified within the Phase I area, of these 14 are prehistoric and two are historic. Twelve of the prehistoric archaeological sites need further evaluation to determine eligibility under NRHP Criterion D and CRHR Criterion 4, and the remaining four are recommended not eligible. Of the sites, eight meet the CARIDAP criteria for further evaluation and four warrant further evaluations on an individual basis to determine eligibility. The table below provides a brief outline of archaeological findings in Phase I area

recommended evaluations and management of these resources. The detailed descriptions of each resource including permanent/temporary resource designation, constituents and recommendations with regard the NRHP and CRHR eligibility can be found in Appendix Z-Confidential Technical Report-Section 6.

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Table 5.7-3
Archaeological Sites within the Phase I Area

Site Designation	Acres	Acres	Overall Site Density	Site Classification(s)*	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendation
DRK-012	0.8	3,090 m^2	0.4 artifacts per m^2	AP2 Lithic scatter	5 lithic reduction loci. 109 flakes 2 Edge Modified Flake scraper 1scraper/chopper 1 core 1 biface	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-023	0.01	63 m^2	0.2 artifacts per m^2	AP2 Lithic Scatter	12 flakes, 3 Edge Modified Flakes, 1 scraper	Good	No	Not Eligible	None
KRM-024	N/A	N/A	N/A	AP13 Trails / Linear Features	Prehistoric/Historic Trail	Poor	No	Insufficient information to assess NRHP and CRHR eligibility	Mitigate through further documentation
KRM-028	N/A	N/A	N/A	AP13 Trails / Linear Features	Prehistoric/Historic Trail	Good	No	Insufficient information to assess NRHP and CRHR eligibility	Mitigate through further documentation

Table 5.7-3
Archaeological Sites within the Phase I Area

Site Designation	Acres	Acres	Overall Site Density	Site Classification(s)*	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendation
RAN-011	0.04	147 m^2	0.2 artifacts per m^2	AP2 Lithic Scatter	29 flakes 1 preform	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-025	0.3	135 m^2	0.2 artifacts per m^2	AP2 Lithic Scatter	25 flakes 2 cores 5 shatter	Good	No	Not Eligible	None
RAN-035H	N/A	N/A	N/A	AH16 Historic cairn / land / mine claim	1 cairn	Good	No	Not Eligible	None
SGB-007	0.2	849 m^2	0.02 artifacts per m^2	AP2 Lithic scatter AP16 Other	33 flakes 1 ceramic sherd	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition-

Table 5.7-3
Archaeological Sites within the Phase I Area

Site Designation	Acres	Acres	Overall Site Density	Site Classification(s)*	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendation
SGB-013	0.3	132 m^2	0.09 artifact per m^2	AP2 Lithic Scatter	12 flakes	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-017	0.2	651m^2	0.2 artifacts per m^2	AP2 Lithic Scatter	85 flakes	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-041	0.1	463m^2	0.2 artifacts per m^2	AP2 Lithic Scatter	125 flakes 1 Edge Modified Flake 1 Biface	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-097	0.2	613m^2	0.01 artifacts per m^2	AP2 Lithic Scatter	9 Flakes	Fair	No	Not Eligible	None

Table 5.7-3
Archaeological Sites within the Phase I Area

Site Designation	Acres	Acres	Overall Site Density	Site Classification(s)*	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendation
SGB-099	0.04	171m^2	0.06 artifacts per m^2	AP2 Lithic Scatter AP11 Hearth/pits	6 Flakes	Fair	No	Not Eligible	None
SGB-104	0.03	144m^2	0.2 artifacts per m^2	AP2 Lithic Scatter	34 Flakes	Fair	No	Not Eligible	None
SM-027	0.06	239m^2	0.02 artifacts per m^2	AP2 Lithic Scatter	6 Flakes	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
CA-SBR-4558H	75 acres	N/A	N/A	AH9 Mines/quarries/tailings AH4 Privies/dumps/trash scatters AH2 Foundations/ structure pads AH6 Water conveyance system AH10 Machinery AH16 Other	The Logan Mine=2 historic refuse deposits =1000+ artifacts	Fair	Yes	Not Eligible	None

Table 5.7-3
Archaeological Sites within the Phase I Area

Site Designation	Acres	Acres	Overall Site Density	Site Classification(s)*	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendation

Notes:
*CARIDAP = California Archaeological Resource Identification and Data Acquisition Program: Sparse Lithic Scatter.
**Sites with multiple loci tend to have higher densities per loci than the overall density expresses.

Phase II Area

A total of 106 archaeological sites were identified within the Phase II areas, of these 100 are prehistoric, three are historic, and three are multi-component sites. Ninety-six of the prehistoric archaeological sites need further evaluation to determine eligibility under NRHP Criterion D and CRHR Criterion 4. Nine of the resources are not considered eligible under NRHP or CRHR criterion and no further management is recommended. These sites were not evaluated under local register criterion. Of the 96 resources requiring further evaluation; 81 meet the CARIDAP criteria for testing and 15 warrant further evaluation on an individual case by case basis. The table below provides a summary of the archaeological findings and recommendations in Phase II. See Appendix Z Confidential Technical Report – Section 6 for detailed descriptions and individual evaluations.

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Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-133	0.05	224 m^2	0.03 artifacts per m^2	AP2 Lithic Scatter	5 flakes 1 cobble tool 1 hammerstone	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-134/H	0.3	6,617ft^2	0.007 artifacts per ft^2	AH4 Privies / dumps / trash scatters AP2 Lithic Scatter	16 flakes 24 historic artifacts including matchstick cans square machine-cut nails green bottle neck and base fragments clear glass railroad marbles metal wire and straps jar seal sheet metal fragments 1 three circle dragonfly ceramic bowl	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-136	0.2	1,006m^2	0.02 artifacts per m^2	AP2 Lithic Scatter	21 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-139	0.2	799m^2	0.03 artifacts per m^2	AP2 Lithic Scatter	24 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-140	1.1	4,558m^2	0.01artifacts per m^2	AP2 Lithic Scatter	58 flakes 2 cores 1 Edge Modified Flake 1 unifacial flaked tool 2 bifacially flaked tools	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-141	0.2	780m^2	0.04 artifacts per m^2	AP2 Lithic Scatter	25 flakes 1 Edge Modified Flake 1 unifacial core tool	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
					1 multidirectional core tool 1 Lithic reduction locus				
DRK-142	7	29,561m^2	0.02 artifacts per m^2	AP2 Lithic Scatter	420 flakes 8 cores 3 hammerstones 8 Edge Modified Flake 3 bifacial tools 9 bifaces 1 utilized flake 7 Lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-145	0.4	1,566m^2	0.04 artifacts per m^2	AP2 Lithic Scatter	59 flakes 4 multidirectional cores 2 bifacial cores 1 unidirectional core 4 Lithic reduction loci	No	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-150	0.2	807m^2	0.05 artifacts per m^2	AP2 Lithic Scatter	44 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-152	0.3	1,260m^2	0.01 artifacts per m^2	AP2 Lithic Scatter	18 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-153	0.4	1,543m^2	0.02 artifacts per m^2	AP2 Lithic Scatter	32 flakes 1 biface fragment 1 utilized flake 1 unifacial scraper	No	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-155H	0.4	16,124ft^2	0.002 artifacts per m^2	AH4 Privies / dumps / trash scatters	38 historic artifacts including Scattered lumber and structural railroad fragments	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
					nails barrel straps cans 1 glass bottle				
DRK-160	0.2	695m^2	0.01 artifacts per m^2	AP2 Lithic Scatter	9 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-163H	0.9	38,838ft^2	0.002 artifacts per ft^2	AH4 Privies / dumps / trash scatters	97 historic artifacts including Cans Solder seam tin Metal strapping 55 gallon drum lid 1 gallon paint can Scattered lumber 3 higher refuse concentration loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-166	0.6	2,512m^2	0.06 artifacts per m^2	AP2 Lithic Scatter	157 flakes 7 cores 1 Edge Modified Flake 7 Lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-167	0.2	508m^2	0.1 artifacts per m^2	AP2 Lithic Scatter	54 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-168H	0.5	20,368ft^2	0.005 artifacts per ft^2	AH4 Privies / dumps / trash scatters	102 historic artifacts including wire, tobacco tins, matchstick cans, 5 gallon barrel cans, glass, Ceramics (2 soy sauce ceramic fragments) 1 gallon led sealed can 1 shell button	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-170	0.4	1,605m^2	0.05 artifacts per m^2	AP2 Lithic Scatter	66 flakes 9 cores, 1 edge modified core, 2 Edge Modified Flake 2 lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-171	0.04	165m^2	0.05 artifacts per m^2	AP2 Lithic Scatter	8 flakes 1 core	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-173	8	20,969m^2	0.1 artifacts per m^2	AP2 Lithic Scatter	2,357 flakes 15 cores 4 bifacial flakes 1 hammerstone 1 chopper 1 mano 2 Edge Modified Flake 78 Lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-174	1	4,438m^2	0.06 artifacts per m^2	AP2 Lithic Scatter	282 flakes 9 cores 1 biface 11 Lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-175	0.7	2,833m^2	0.07 artifacts per m^2	AP2 Lithic Scatter	179 flakes 3 bifaces 10 cores 1 bifacial tool	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-176/H	0.3	Locus 1 240m^2 Locus 2 16,361 ft^2	Locus 1 0.02 per m^2 Locus 2 0.001 sq feet	AH4 Privies / dumps / trash scatters AP2 Lithic Scatter	1 mano 1 metate 2 flakes 23 historic artifacts including Cans Bottle/jar glass fragments Iron fasteners Metal sheets 1 prehistoric locus 1 historic locus	Locus 1 Yes Locus 2 No	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-177	0.06	256m^2	0.1 artifacts per m^2	AP2 Lithic Scatter	29 flakes 3 Lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-178	0.5	2,220m^2	0.08 artifact per m^2	AP2 Lithic Scatter	180 flakes 4 cores 7 Lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-180	0.8	3,530m^2	0.07 artifacts per m^2	AP2 Lithic Scatter	242 flakes 9 cores 9 bifacial tools 7 lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-182	0.5	2,065m^2	0.03 artifacts per m^2	AP2 Lithic scatter	55 flakes 2 core tools 5 cores 4 lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-184	0.03	141m^2	0.2 artifacts per m^2	AP2 Lithic Scatter	30 flakes 2 multidirectional cores 1 Lithic reduction locus	No	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
EJK-002	0.5	1,864m^2	0.02 per m^2	AP2 lithic scatter. AH4 privies / dumps / trash scatters	40 flakes, 3 cans	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
EJK-004	2	7,237m^2	0.004 per m^2	AP2 lithic scatter. AH4 privies / dumps / trash scatters	30 biface flakes, 2 flakes, 1 historic external friction lid	Yes	Poor	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
EJK-005	0.06	228m^2	0.03 artifacts per m^2	AP2 Lithic scatter	6 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
EJK-009	26	105,031m^2	0.02 per m^2	AP2 lithic scatter	1,294 sample artifacts 1 ovate biface, 1 biface core, 3 cores, 1 flakes cobble tool, 3 flaked tools, 14 bifaces, 1 scraper, 1 edge modified flake, 1 core tool 3 Lithic reduction loci	No	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-002	0.6	2,599m^2	0.02 artifacts per m^2	AP2 Lithic scatter	54 flakes 1 Lithic reduction locus	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
KRM-003	0.2	741m^2	0.01 artifacts per m^2	AP 2 lithic scatter	9 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-008	0.5	1,982m^2	0.02 artifacts per m^2	AP 2 lithic scatter	35 flakes, 2 bifaces 2 lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-133	4	17,621m^2	0.007 per m^2	AP2 lithic scatter	125 flakes, 2 cores, 2 assayed cobbles, 6 bifaces	Yes	Poor	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-135	14	57,226m^2	0.01 per m^2	AP2 lithic scatter	751 flakes, 9 bifaces, 3 cores 2 lithic scatter loci	NO	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-137	0.1	399m^2	0.01 per m^2	AP2 lithic scatter	6 flakes	No	Fair	Not Eligible	None

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
KRM-141	0.07	305m^2	0.1 per m^2	AP2 lithic scatter	44 flakes	No	Good	Not Eligible	None
KRM-153	1	5,019m^2	0.01 per m^2	AP2 lithic scatter	50 flakes, 2 bifaces	No	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-154	0.1	468m^2	0.006 per m^2	AP13 Trails/linear earthworks AP16 Other	2 flakes, 1 biface	No	N/A	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
KRM-160	5	21,146m^2	0.03 per m^2	AP2 lithic scatter	721 flakes, 5 cores, 8 bifaces 24 Lithic reduction loci	No	Fair	Needs further evaluation under NRHP Criterion D and/or CRHR 4	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-164	1	3,845m^2	0.004 per m^2	AP2 lithic scatter	19 flakes	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Mitigate through further documentation
KRM-167	3.3	13,469m^2	0.05 per m^2	AP2 lithic scatter. AP8 cairn/rock feature	627 flakes, 7 bifaces, 5 cores	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
					28 Lithic reduction loci				
KRM-170	21	84,034m^2	0.005 per m^2	AP2 lithic scatter. AP8 cairn/ rock feature	386 flakes 23 cores 3 bifaces 2 flake tools 1 hammerstone 9 Lithic reduction loci	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
LTL-008	0.7	2,795m^2	0.02 per m^2	AP2 lithic scatter	58 flakes, 1 bifacial modified flake 1 core	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-009	1.1	4,703m^2	0.02 per m^2	AP2 lithic scatter	84 flakes, 1 edge modified biface 6 Lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-011	0.1	398m^2	0.07 per m^2	AP2 lithic scatter	26 flakes, 1 core	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
									CARIDAP*
LTL-012	0.004	14m^2	0.9 m^2	AP2 lithic scatter	14 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-015	0.5	2,150m^2	0.02 artifact per m^2	AP 2 lithic scatter	44 flakes, core fragments 1 core 1 Lithic reduction locus	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-016	0.3	1,153m^2	0.05 artifacts per m^2	AP 2 lithic scatter	59 flakes, 1 bi-directional core 3 lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-017	0.09	386m^2	0.11 artifacts per m^2	AP 2 lithic scatter	45 flakes 1 early stage biface	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
LTL-018	2	7,989m^2	0.008 artifacts per m^2	AP 2 lithic scatter	69 flakes 2 Lithic reduction locus	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-019	0.03	1,216m^2	0.009 artifacts per m^2	AP 2 lithic scatter	12 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-022	0.03	111m^2	0.1 per m^2	AP2 lithic scatter	13 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-023	0.09	349m^2	0.03 per m^2	AP2 lithic scatter	10 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-101	0.7	2,804m^2	0.009 per m^2	AP2 lithic scatter AP11 Hearths / pits	91 flakes;	No	Fair	Not Eligible	None

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
					1 core, 2 flake tools 2 Lithic reduction loci 1 hearth				
RAN-107	0.4	1,786m^2	0.003 per m^2	AP2 lithic scatter	1 core; 6 flakes	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-110	0.4	1,691m^2	0.006 per m^2	AP2 lithic scatter	2 cores; 11 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-114	10	40,572m^2	0.008 per m^2	AP2 lithic scatter;	292 flakes, 16 cores, 1 tested cobble, 2 core fragments, 4 bifaces, 4 stone tools 17 lithic	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
					reduction loci				
RAN-116	0.4	1,712m^2	0.02 per m^2	AP2 lithic scatter	32 flakes, 1 core, 1 hammerstone 1 Lithic reduction locus	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-118	6	25,036m^2	0.01 per m^2	AP2 lithic scatter	247 flakes, 31 cores, 10 core fragments, 1 Edge Modified Flake 11 lithic reduction loci	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-120	12.16	49,223m^2	0.01 artifacts per m^2	AP2 Lithic scatter	554 flakes, 66 cores (bifacial and multidirectional) 1 biface 29 lithic reduction loci	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-123	0.01	50m^2	0.2 per m^2	AP2 lithic scatter	17 flakes	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
									CARIDAP*
RAN-128	0.8	3,341m^2	0.008 per m^2	AP2 lithic scatter	28 flakes 1 core/chopper 2 cores 1 lithic reduction locus	No	Good	Not Eligible	None
RAN-131	0.03	123m^2	0.06 artifacts per m^2	AP 2 Lithic scatter	10 flakes 1 chopper core tool 1 lithic reduction locus	No	Good	Not Eligible	None
RAN-138	0.60	2,459m^2	0.002 artifacts per m^2	AP2 Lithic scatter	6 flakes 7 cores 1 bottle base 1 hole in top can	No	Fair	Not Eligible	None
RAN-139	0.14	569m2	0.03 artifacts per m2	AP 2 lithic scatter	16 flakes 3 core fragments 2 tested cobbles 2 loci	No	Fair	Not Eligible	None
RAN-146	0.006	26m^2	0.8 per m^2	AP2 lithic scatter	20 flakes 1 core	No	Fair	Not Eligible	None
RAN-154	0.05	223m^2	0.05 per m^2	AP2 lithic scatter	12 flakes	No	Fair	Not Eligible	None

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
RN-155	1.6	6,440m^2	0.01 per m^2	AP2 lithic scatter AP11 hearths / pits	120 flakes 14 cores 4 Lithic reduction loci	No	Fair	Not Eligible	None
RAN-163	0.4	1,446m2	0.03 artifacts per m2	AP 2 lithic scatter	46 flakes 10 cores 1 tested cobble 3 lithic reduction areas	No	Fair	Not Eligible	None
RAN-168	0.06	241m^2	0.03 per m^2	AP2 lithic scatter	7 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-169	0.2	697m^2	0.04 per m^2	AP2 lithic scatter	27 flakes 2 cores (1 bifacial)	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-170	0.5	1,887m^2	0.08 per m^2	AP2 lithic scatter	142 flakes 2 biface fragments	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
									CARIDAP*
RAN-171	0.08	316m^2	0.2 per m^2	AP2 lithic scatter	70 flakes 1 core 1 projectile point 1 abrader 5 bifaces	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-173	10	39,138m^2	0.02 per m^2	AP2 lithic scatter	570 flakes 70 cores 1 biface core 7 shatter 12 Lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-175	0.01	62m^2	0.2 per m^2	AP2 lithic scatter	11 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-177	0.2	964m^2	0.05 per m^2	AP2 lithic scatter	44 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
RAN-179	0.1	586m^2	0.04 per m^2	AP2 lithic scatter	20 flakes 2 cores	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-180	0.1	518m^2	0.007 per m^2	AP2 lithic scatter	35 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-181	0.01	57m^2	0.2 per m^2	AP2 lithic scatter	9 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-183	0.5	2,130m^2	0.02 per m^2	AP2 lithic scatter. AH16 Other (rock cairn)	33 flakes 6 cores 1 historic rock cairn 1 lithic reduction locus	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
RAN-186	0.003	13m^2	0.7 per m^2	AP2 lithic scatter	11 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-188	0.1	542m^2	0.06 per m^2	AP2 lithic scatter	32 flakes 1 shatter	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-190	0.3	1,305 m^2	0.008m^2	AP2-lihic scatter	8 flakes 2cores	No	Good	Not Eligible	None
RSS-005	0.7	2,711m^2	0.007 artifacts per m^2	AP2 Lithic scatter	19 flakes 1 assayed cobble	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-006	0.05	185m^2	0.03 artifacts per m^2	AP2 Lithic scatter	6 flakes	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
RSS-008	0.5	1,983m^2	0.036 artifacts per m^2	AP2 Lithic scatter	96 flakes 4 lithic reduction loci	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-009	0.07	246m^2	0.02 artifacts per m^2	AP2 Lithic scatter	5 flakes 1 biface	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-011	1.31	5,287m^2	0.04 artifacts per m^2	AP2 Lithic scatter	208 flakes, 4 cores, 1 core/tool, 1 scraper 1 expedient tool. 4 lithic reduction loci	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-013	0.31	1,249m^2	0.03 artifacts per m^2	AP2 Lithic scatter	55 flakes 1 flake tool 2 lithic reduction loci	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
RSS-014	4	15,103m^2	0.03 artifacts per m^2	AP2 Lithic scatter	590 flakes 1 hammerstone fragment 2 flake tools 1 scraper 1 core 12 lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-017	5.16	20,869m^2	0.037 artifacts per m^2	AP 2 Lithic scatter AP 8 Cairns /rock features AP11 Hearth / pits AP 16 Other (cleared circles)	750 flakes 2 scraper, 2 flake tools, 3 biface, 1 unifacial, 2 assayed cobbles, 1 multi-core, 22 collapsed cairns, 2 cleared circles, 1 hearth 21 lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
RSS-018	2	7,508m^2	0.02 artifacts per m^2	AP 2 Lithic scatter	146 flakes, 1 core, 1 scraper, 1 flake tool	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-112/H	25.24	Undetermined	Undetermined	AP 2 Lithic Scatter AH 4 Privies / dumps / trash scatters	198 flakes, 2 core tools, 1 flake tool, 1 biface fragment, 6 cores. 1,000+ historic artifacts consisting of 300 pieces of bottle glass, 150 cans, 40 pieces of ceramic tableware; wood and metal construction artifacts; metal frames masonry 9 historic refuse	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
					scatter loci 14 lithic reduction loci				
SGB-114	1.13	4,549m^2	0.006 artifacts per m^2	AP 2 Lithic Scatter	27 flakes, 1 bifacial tool, 1 core tool, 1 metate fragment	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
SGB-118	0.05	197m^2	0.05 artifacts per m^2	AP 2 Lithic Scatter	11 flakes	No	Fair	Not Eligible	None
SGB-120	0.44	1,089m^2	0.05 artifacts per m^2	AP 2 Lithic Scatter	55 flakes	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-127	0.53	2,135m^2	0.007 artifacts per m^2	AP 2 Lithic Scatter	15 flakes 1 utilized flake	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
CA-SBR-1908	119.06	481,827.63m^2	0.013 artifacts per m^2	AP2 Lithic scatter, AP12 Quarry, AH4Privies /	6,310 artifacts including 306 locus, 1historic trash scatter 234	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
				dumps / trash scatter	point provenienced artifacts				
CA-SBR-3876 (EJK-021)	3	11,677m^2	0.002 artifacts per m^2	AP 2 Lithic scatter	30 flakes 1 biface 1 Edge Modified Flake	Yes	Poor	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
CA-SBR-4681 (RAN 102)	6.2	25,121m^2	0.002 artifacts per m^2	AP 2 Lithic scatter	333 flakes 16 cores 1 flake tool 14 lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
CA-SBR-5600 (RAN-189)	4.6	18,753m^2	0.004 artifacts per m^2	AP 2 Lithic scatter	200 flakes, 12 cores 1 biface 8 lithic reduction loci	No	Fair	Not Eligible	None
CA-SBR-6528 (RSS-020)	12.06	48,841m^2	0.01 artifacts per m^2	AP 2 Lithic scatter	530 flakes 1 projectile point (pinto shoulderless), 8 bifaces,	Yes	Fair	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-4
Archaeological Sites within Phase II Area

Site Designation	Acres	Area	Site Density	Site Classification(s)*	Cultural Constituents	Potential for Subsurface Deposition	Integrity	NRHP/CRHR Eligibility Recommendations	Management Recommendations
					2 unifaces, 1 drill, 1 assayed boulder, 1 multi-directional core 1 Lithic reduction locus				
C-SBR-6521	7	28,188m2	0.01 artifacts per m2	AP 2 lithic scatter AP8 cairns / rock features	281 flakes 5 cores, 2 core fragments, 1 biface, 2 tested cobbles, 2 rock cairn features 11 Lithic reduction loci	Yes	Good	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Notes:
*CARIDAP = California Archaeological Identification and Data Acquisition Program: Sparse Lithic Scatters.
**Sites with multiple loci tend to have higher densities per loci than the overall density expresses.

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Pisgah Substation Triangle Area

A total of five new archaeological sites were identified and two previously recorded sites were identified in the Pisgah Substation Triangle Area. The 2 updates to previously recorded sites CA-SBR-6512 and -6513 were found to have a greater extent than previously recorded, which required both sites to be combined as a single site. Of the seven sites recorded and updated within the Pisgah Substation Triangle area; six are prehistoric lithic scatters/procurement sites and one is a historic refuse scatter. The six lithic scatters identified within this area have the potential for subsurface deposition. Surface observation data alone is not sufficient data to determine eligibility therefore these sites need further evaluation/testing to determine eligibility under NRHP (Criterion D) and CRHR. These sites were not reviewed for eligibility under local registries. Five of the six lithic scatters meet the CARIDAP criteria for further evaluation/testing. The large lithic procurement site (previously recorded as CA-SBR-6512 and 6513) should be tested by individual loci density using CARIDAP. The historic refuse scatter (SGB-036H) is not considered eligible; no further management is recommended. For detailed description of each resource and individual evaluations see Appendix Z Confidential Technical Report-Section 6.

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Table 5.7-5
Archaeological Sites within the Pisgah Substation Triangle Area

Site Designation	Acres	Area	Overall Site Density**	Site Classification(s)	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendations
SGB-024	0.2	16.5 m^2	0.8 artifacts per m^2	AP2 Lithic Scatter	13 Flakes	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SBG-032	0.08	341 m^2	0.05 artifacts per m^2	AP2 Lithic Scatter	20 Flakes 1 Core 1 Edge Modified Flake	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-034	0.1	524 m^2	0.2 artifacts per m^2	AP2 Lithic Scatter	120 flakes and shatter	Fair	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-036H	0.007	9,413 sq. feet	0.003 artifacts per sq. foot	AH4 Privies/dumps/trash scatters	18 bottles/cans	Good	Yes	No	None
SGB-037	0.03	126 m^2	0.1 artifacts per m^2	AP2 Lithic Scatter	13 flakes	Poor	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-5
Archaeological Sites within the Pisgah Substation Triangle Area

Site Designation	Acres	Area	Overall Site Density**	Site Classification(s)	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendations
SGB-038	0.2	1,020 m^2	0.05 artifacts per m^2	AP2 Lithic Scatter	50 flakes 1 biface 1 cobble tool	Fair	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
CA-SBR-6512 and CA-SBR-6513 (SGB-028)	31	125,949m2	0.003 artifacts per m2	AP2 Lithic Scatter	23 lithic reduction loci 410 flakes 1 hammerstone 3 cores 3 biface	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Notes:
*CARIDAP = California Archaeological Resource Identification and Data Acquisition Program: Sparse Lithic Scatter.
**Sites with multiple loci tend to have higher densities per loci than the overall density expresses.

Access Roads Corridors and Bridge Crossing

A total of eight new archaeological sites were identified within proposed Access Corridors. Of these four are historic, three are prehistoric, and one is multi-component. Of the total, three sites require further evaluation/testing to determine eligibility under NRHP (Criterion D) and CRHR (Criterion 4). The remaining five sites (three historic, one prehistoric, and one multi-component) are not considered eligible under NRHP or CRHR. These sites have little to no potential for subsurface deposition, such sites are well documented; therefore, it is unlikely that these sites can provide additional data important to prehistory or history. These sites were not reviewed for potentially eligibility under local registries. For detailed site description and individual evaluations see Appendix Z Confidential Technical Report – Section 6.

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Table 5.7-6
Archaeological Sites within Solar One Access Road Corridors and Bridge Crossing

Site Designation	Acres	Area	Overall Site Density**	Site Classification	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-045	0.1251	506m^2	0.02 artifacts per m^2	AP 2 Lithic Scatter	1 projectile point, 3 choppers, 1 Edge Modified Flake , 1 scraper, 1 hammer stone, 1 core, 1 flake	good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-110H	0.5	20,883ft^2	0.002 artifacts per ft^2	AH 4 Privies /dumps/ trash scatters	Primarily consists of sanitary meat/veg. cans and hole-in-top, low density of glass and ceramics	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

Table 5.7-6
Archaeological Sites within Solar One Access Road Corridors and Bridge Crossing

Site Designation	Acres	Area	Overall Site Density**	Site Classification	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-111/H	0.08	324 m^2	0.003 artifacts per ft^2	AH 4 Privies / dumps/ trash scatters AP 2 Lithic Scatter	Historic can scatter (matchstick, hole-in-top, sanitary) and 1 glass marble. Lithic scatter (11 banded red/blk chert flakes and 1 Edge Modified Flake	Good	Unlikely-desert pavement	Not Eligible	None
DRK 112H	0.002	7	N/A	AH16 Other (Rock Cairn)	Historic/Modern cairn that measures 55ft. (N/S) x 5ft.6" (E/W) x 1ft.5" (H) and contains two layers of small to large sub-rounded to sub-angular cobbles	Good	Unlikely-Desert Pavement	Not Eligible	None

Table 5.7-6
Archaeological Sites within Solar One Access Road Corridors and Bridge Crossing

Site Designation	Acres	Area	Overall Site Density**	Site Classification	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK 113H	0.002	7	N/A	AH16 Other (Rock Cairn)	Historic/Modern rock cairn that measures 19" (N/S) x 21"(E/W) x 7"(H) and has one layer of small to large sub-rounded to sub-angular cobbles	Good	Unlikely-Desert Pavement	Not Eligible	None
DRK 114	0.002	9	0.8 artifacts per m^2	AP 2 Lithic Scatter	7 debitage	Good	Unlikely-Desert Pavement	Not Eligible	None
DRK 115H	0.03	1403ft^2	0.9 artifacts per m^2	AH 4 Privies / dumps/ trash scatters	26 cans were identified including matchstick cans, sanitary cans, tobacco tins, a spice tin, machine parts and metal fragments	Fair	Unlikely-Desert Pavement	Not Eligible	None

Table 5.7-6
Archaeological Sites within Solar One Access Road Corridors and Bridge Crossing

Site Designation	Acres	Area	Overall Site Density**	Site Classification	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-116	0.008	$32m^2$	0.8 artifacts per m^2	AP2 Lithic scatter	2 choppers, 4 Edge Modified Flake, 1 scraper, 1 biface, 1 core, 30 flakes	good	Unlikely-Desert Pavement	Not Eligible	None

Notes:
*CARIDAP = California Archaeological Resource Identification and Data Acquisition Program: Sparse Lithic Scatter.
**Sites with multiple loci tend to have higher densities per loci than the overall density expresses.

Archaeological Sites within the 200-Foot Buffer

A total of four new archaeological sites were identified within the 200-foot buffer; three prehistoric and one historic archaeological site. Of this total, two archaeological sites (DRK-021H, DRK-026) need further evaluation to determine eligibility under NRHP (Criterion D) and CRHR (Criterion 4), in that these resources have the potential to yield additional data important to prehistory and history. One of the sites warranted eligible can be managed under CARIDAP and the other requires further evaluation on an individual basis. Two of the findings are not considered eligible (DRK-001 and RAN-108) in that these sites do not fit any of the NRHP or CRHR criteria. The resources were not reviewed for eligibility under local registries. For detailed site description and individual evaluations see Appendix Z Confidential Technical Report – Section 6.

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Table 5.7-7
Archaeological Sites within the 200-Foot Archaeological Buffer

Site Designation	Acres	Area	Overall Site Density**	Site Classification(s)	Cultural Constituents	Integrity	Potential for Subsurface Deposition	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-001	0.1	545m^2	0.6 artifacts per m2	AP2 Lithic scatter	34 flakes 1 core	Good	Unlikely-Desert Pavement	Not Eligible	None
DRK-021H	1	48,502 sq ft	0.02 artifacts per ft^2	AH4 Privies / dumps / trash scatters	Historic can scatter	Good	Yes	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
DRK-026	0.1	596m^2	0.04 artifacts per m^2	AP2 Lithic scatter	27 flakes 1 scraper 6 EDGE MODIFIED FLAKE s	Good	Unlikely-Desert Pavement	Not Eligible	None
RAN-108	0.254	1,568m^2	0.004 artifacts per m^2	AP2 Lithic scatter	6 flakes and 1 core	Fair	No	Not Eligible	None

Notes:
*CARIDAP = California Archaeological Resource Identification and Data Acquisition Program: Sparse Lithic Scatter.
**Sites with multiple loci tend to have higher densities per loci than the overall density expresses.

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Isolates

A total of 241 isolated archaeological resources were identified during the course of the Class III Intensive Field Survey. Isolates for the purposed of this Survey and per BLM guidelines were defined as five or fewer artifacts within 30 meters, which were recorded Primary Record (DPR 523A) and Location Map (DPR 523J). Isolates generally are not considered eligible resources under NRHP, CRHR, and/or local registers, since these findings lack context, subsurface deposition, and data potential is considered exhausted through recordation.

The table below provides a list of all isolates recorded (Figure 6.3.4-1 Appendix Z – Confidential Technical Report / Confidential Appendix A- Maps and Figures).

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Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
36-064407	AP16 Isolate	5 flakes	No	No	10/5/2008
DRK-ISO-005	AP16 Isolate	1 Flake CCS Chert	No	No	8/7/2008
DRK-ISO-008	AP16 Isolate	1 Flake CCS Chert	No	No	8/7/2008
DRK-ISO-010	AP16 Isolate	1 Flake CCS Chert	No	No	8/8/2008
DRK-ISO-011	AP16 Isolate	1 Biface CCS Chert	No	No	8/9/2008
DRK-ISO-016	AP16 Isolate	1 Biface fragment and shatter CCS Chert	No	No	8/12/2008
DRK-ISO-022	AP16 Isolate	1 Biface CCS Chalcedony	No	No	8/19/2008
DRK-ISO-117	AP16 Isolate	1 Flake CCS Chert	No	No	9/19/2008
DRK-ISO-118	AP16 Isolate	1 Flake CCS Chert	No	No	9/19/2008
DRK-ISO-119	AP16 Isolate	1 flake, biface fragment (tip) CCS Chert	No	No	9/19/2008
DRK-ISO-132	AP16 Isolate	1 Flake CCS Jasper	No	No	10/5/2008
DRK-ISO-138	AP16 Isolate	4 Flakes CCS Jasper	No	No	10/7/2008
DRK-ISO-144	AP16 Isolate	3 Flakes CCS Jasper	No	No	10/8/2008
DRK-ISO-147	AP16 Isolate	1 Flake CCS Jasper	No	No	10/10/2008
DRK-ISO-148	AP16 Isolate	1 Flake CCS Chert	No	No	10/10/2008
DRK-ISO-149	AP16 Isolate	1 Flake CCS Chalcedony	No	No	10/10/2008
DRK-ISO-151	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/10/2008
DRK-ISO-154	AP16 Isolate	1 Flake CCS Jasper	No	No	10/10/2008
DRK-ISO-157	AP16 Isolate	1 Flake CCS Jasper	No	No	10/15/2008
DRK-ISO-158	AP16 Isolate	1 Flake Basalt	No	No	10/15/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
DRK-ISO-161	AP16 Isolate	4 Flakes CCS Jasper	No	No	10/16/2008
DRK-ISO-162	AP16 Isolate	3 Flakes CCS Jasper 1 Biface tip CCS Jasper	No	No	10/17/2008
DRK-ISO-164	AP16 Isolate	1 Biface CCS Jasper 1Flake CCS Jasper	No	No	10/17/2008
DRK-ISO-165	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/17/2008
DRK-ISO-169	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/20/2008
DRK-ISO-172	AP16 Isolate	1 Flake CCS Chert	No	No	10/20/2008
DRK-ISO-181	AP16 Isolate	1 Core CCS Jasper 3 Flakes CCS Jasper 1 Flake Rhyolite	No	No	10/28/2008
EJK-ISO-001	AP16 Isolate	1 Flake CCS Chalcedony	No	No	10/25/2008
EJK-ISO-003	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/26/2008
EJK-ISO-007	AP16 Isolate	2 Flakes CCS Chalcedony 1 Flake CCS Jasper	No	No	10/26/2008
EJK-ISO-008	AP16 Isolate	2 Flakes CCS Jasper 1 Flake CCS Chalcedony	No	No	10/26/2008
EJK-ISO-010	AP16 Isolate	3 Flakes CCS Jasper	No	No	10/28/2008
EJK-ISO-011	AP16 Isolate	2 Flakes CCS Jasper 2 Flakes CCS Chalcedony	No	No	10/28/2008
EJK-ISO-014	AP16 Isolate	1 Flakes CCS Chert	No	No	10/28/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
		1 Flake CCS Chalcedony 1 Flake CCS Jasper			
EJK-ISO-015	AP16 Isolate	2 Flakes CCS Jasper 2 Flakes CCS Chert 1 Flakes CCS Chalcedony	No	No	10/28/2008
EJK-ISO-017	AP16 Isolate	1 Flake CCS Chalcedony	No	No	10/30/2008
EJK-ISO-018	AP16 Isolate	2 Flakes CCS Chalcedony 2 Flakes CCS Jasper	No	No	10/30/2008
EJK-ISO-019	AP16 Isolate	1 Flake CCS Chert	No	No	10/30/2008
EJK-ISO-020	AP16 Isolate	3 Flakes CCS Chalcedony 1 Flake CCS Jasper	No	No	10/30/2008
KRM-ISO-001	AP16 Isolate	1 Flake CCS Jasper	No	No	8/5/2008
KRM-ISO-004	AP16 Isolate	5 debitage CCS	No	No	8/6/2008
KRM-ISO-005	AP16 Isolate	1 scraper tool CCS Chalcedony	No	No	8/7/2008
KRM-ISO-006	AP16 Isolate	2 Flakes CCS Chert	No	No	8/7/2008
KRM-ISO-007	AP16 Isolate	1 Flake CCS Chalcedony	No	No	8/8/2008
KRM-ISO-009	AP16 Isolate	1 Core CCS Chalcedony	No	No	8/8/2008
KRM-ISO-010	AP16 Isolate	3 flakes CCS Chalcedony/Chert	No	No	8/8/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
KRM-ISO-011	AP16 Isolate	1 Flake CCS Jasper	No	No	8/8/2008
KRM-ISO-012	AP16 Isolate	2 Flakes CCS Chert	No	No	8/8/2008
KRM-ISO-013	AP16 Isolate	1 Debitage, 1 Biface CCS Chert	No	No	8/8/2008
KRM-ISO-014	AP16 Isolate	1 Flake CCS Chalcedony	No	No	8/8/2008
KRM-ISO-015	AP16 Isolate	2 Flakes CCS Chalcedony	No	No	8/8/2008
KRM-ISO-016	AP16 Isolate	1 Flake CCS Chert	No	No	8/9/2008
KRM-ISO-017	AP16 Isolate	1 Flake CCS Chalcedony	No	No	8/9/2008
KRM-ISO-018	AP16 Isolate	1 Flake CCS Chalcedony	No	No	8/9/2008
KRM-ISO-019	AP16 Isolate	5 Flakes CCS Chalcedony Chert/Chalcedony	No	No	8/9/2008
KRM-ISO-020	AP16 Isolate	1 Flake CCS Jasper	No	No	8/9/2008
KRM-ISO-021	AP16 Isolate	1 Preform CCS Chert	No	No	8/9/2008
KRM-ISO-022	AP16 Isolate	2 Flakes CCS Chert	No	No	8/9/2008
KRM-ISO-025	AP16 Isolate	Distal end of Projectile Point CCS Jasper	No	No	8/13/2008
KRM-ISO-027	AP16 Isolate	1 Flake CCS Chalcedony	No	No	8/19/2008
KRM-ISO-130	AP16 Isolate	1 Early Stage Biface CCS Chalcedony 1 Flake CCS Chalcedony	No	No	10/6/2002

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
KRM-ISO-132	AP16 Isolate	2 Flakes CCS Chalcedony	No	No	10/6/2008
KRM-ISO-134	AP16 Isolate	1 Flake CCS Chalcedony	No	No	10/2/2008
KRM-ISO-136	AP16 Isolate	3 Flakes CCS Jasper	No	No	10/9/2008
KRM-ISO-138	AP16 Isolate	1 Flake CCS Chalcedony	No	No	10/9/2008
KRM-ISO-139	AP16 Isolate	1 Flake CCS Chalcedony	No	No	10/9/2008
KRM-ISO-140	AP16 Isolate	1 Flake CCS Chert	No	No	10/9/2008
KRM-ISO-142	AP16 Isolate	2 Flakes CCS Chalcedony 2 Flakes CCS Chert	No	No	10/9/2008
KRM-ISO-143	AP16 Isolate	3 Flakes CCS Chalcedony	No	No	10/9/2008
KRM-ISO-144	AP16 Isolate	2 Flakes CCS Chalcedony 1 Flake CCS Chert	No	No	10/9/2008
KRM-ISO-145	AP16 Isolate	2 Flakes CCS Chalcedony	No	No	10/9/2008
KRM-ISO-146	AP16 Isolate	1 Flake CCS Chert 1 Flake CCS Chalcedony	No	No	10/9/2008
KRM-ISO-147	AP16 Isolate	1 Flake CCS Chert	No	No	10/9/2008
KRM-ISO-148	AP16 Isolate	1 Flake CCS Jasper	No	No	10/9/2008
KRM-ISO-151	AP16 Isolate	3 Flakes CCs	No	No	10/15/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
		Chalcedony			
KRM-ISO-152	AP16 Isolate	1 Flake CCs Jasper	No	No	10/15/2008
KRM-ISO-155	AP16 Isolate	2 Flakes CCS Chalcedony 1 Flake CCS Jasper	No	No	10/15/2008
KRM-ISO-156	AP16 Isolate	4 Flakes CCS Chalcedony 1 Flake CCS Chert	No	No	10/15/2008
KRM-ISO-157	AP16 Isolate	1 Flake CCS Jasper	No	No	10/15/2008
KRM-ISO-158	AP16 Isolate	1 Flake 1 Shatter CCS Jasper	No	No	10/15/2008
KRM-ISO-159	AP16 Isolate	1 Flake CCS Jasper	No	No	10/15/2008
KRM-ISO-161	AP16 Isolate	1 Flake CCS Jasper	No	No	10/27/2008
KRM-ISO-163	AP16 Isolate	1 Debitage CCS Jasper	No	No	10/28/2008
KRM-ISO-166	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/28/2008
KRM-ISO-171	AP16 Isolate	1 Biface, 2 Flakes, 1 Shatter CCS Jasper	No	No	11/6/2008
LTL-ISO-010	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/28/2008
LTL-ISO-013	AP16 Isolate	4 flakes, 1 EMF CCS Jasper	No	No	10/28/2008
LTL-ISO-020	AP16 Isolate	1 Flake CCS Jasper	No	No	10/30/2008
LTL-ISO-021	AP16 Isolate	1 Flake CCS Jasper	No	No	10/30/2008
RAN-ISO-001	AP16 Isolate	1 Flake	No	No	8/5/2008
RAN-ISO-002	AP16 Isolate	1 Flake Quartz Crystal	No	No	8/5/2008
RAN-ISO-003	AP16 Isolate	1 Flake CCS Jasper	No	No	8/5/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
RAN-ISO-004	AP16 Isolate	1 Flake CCS Jasper	No	No	8/5/2008
RAN-ISO-005	AP16 Isolate	1 Flake CCS Jasper	No	No	8/5/2008
RAN-ISO-006	AP16 Isolate	1 Flake CCS Chalcedony	No	No	8/5/2008
RAN-ISO-007	AP16 Isolate	1 Flake CCS Chert	No	No	8/5/2008
RAN-ISO-008	AP16 Isolate	1 Flake CCS Jasper	No	No	8/6/2008
RAN-ISO-009	AP16 Isolate	1 Scraper CCS Jasper	No	No	8/6/2008
RAN-ISO-010	AP16 Isolate	1 Quartz Mano	No	No	8/6/2008
RAN-ISO-012	AP16 Isolate	1 Scraper CCS Chert	No	No	8/7/2008
RAN-ISO-013	AP16 Isolate	1 Flake CCS Chert	No	No	8/7/2008
RAN-ISO-014	AP16 Isolate	1 Flake CCS Jasper	No	No	8/8/2008
RAN-ISO-015	AP16 Isolate	1 Flake CCS Chert	No	No	8/8/2008
RAN-ISO-016	AP16 Isolate	1 Flake CCS Chalcedony	No	No	8/9/2008
RAN-ISO-017	AP16 Isolate	1 Flake CCS Jasper	No	No	8/9/2008
RAN-ISO-018	AP16 Isolate	1 Projectile Point CCS Chalcedony	No	No	8/9/2008
RAN-ISO-019	AP16 Isolate	1 Chopper CCS Chert	No	No	8/10/2008
RAN-ISO-020	AP16 Isolate	1 Flake CCS Chert/Jasper	No	No	8/10/2008
RAN-ISO-021	AP16 Isolate	1 Core CCS Chert	No	No	8/10/2008
RAN-ISO-022	AP16 Isolate	1 Core CCS Chalcedony	No	No	8/10/2008
RAN-ISO-023	AP16 Isolate	1 Exhausted Core CCS Core	No	No	8/11/2008
RAN-ISO-024	AP16 Isolate	1 Piece of Debitage CCS	No	No	8/11/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
		Chert			
RAN-ISO-027	AP16 Isolate	1 CCS chopper	No	No	8/18/2008
RAN-ISO-028	AP16 Isolate	1 Piece of Debitage Quartz	No	No	8/22/2008
RAN-ISO-029	AP16 Isolate	1 Flake CCS Jasper	No	No	8/24/2008
RAN-ISO-030	AP16 Isolate	1 CCS Biface CCS Jasper	No	No	8/24/2008
RAN-ISO-031	AP16 Isolate	1 Cottonwood projectile point CCS Chert	No	No	8/24/2008
RAN-ISO-032	AP16 Isolate	1 Flake CCS Chert	No	No	8/24/2008
RAN-ISO-033	AP16 Isolate	1 Flake CCS Jasper	No	No	8/24/2008
RAN-ISO-034	AP16 Isolate	1 Flake CCS Jasper	No	No	8/24/2008
RAN-ISO-036	AP16 Isolate	1Bifacial flake CCS Chert	No	No	8/26/2008
RAN-ISO-091	AP16 Isolate	1 Flake CCS Jasper	No	No	10/1/2008
RAN-ISO-092	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/1/2008
RAN-ISO-097	AP16 Isolate	1 Flake CCS Jasper	No	No	10/1/2008
RAN-ISO-098	AP16 Isolate	1 Flake CCs Chalcedony	No	No	10/3/2008
RAN-ISO-099	AP16 Isolate	1 EDGE MODIFIED FLAKE CCS Jasper	No	No	10/3/2008
RAN-ISO-100	AP16 Isolate	1 Flake CCS Chalcedony	No	No	10/4/2008
RAN-ISO-103	AP16 Isolate	1 Flake CCS Chert	No	No	10/5/2008
RAN-ISO-104	AP16 Isolate	1 Flake Basalt	No	No	10/7/2008
RAN-ISO-105	AP16 Isolate	1 Flake CCS Jasper	No	No	10/7/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
RAN-ISO-106	AP16 Isolate	1 Flake CCS Jasper	No	No	10/7/2008
RAN-ISO-109	AP16 Isolate	3 Flakes CCS Jasper	No	No	10/7/2008
RAN-ISO-111	AP16 Isolate	1 Flake CCS Jasper	No	No	10/7/2008
RAN-ISO-113	AP16 Isolate	1 Flake CCS Jasper	No	No	10/7/2008
RAN-ISO-124	AP16 Isolate	1 Flake CCS Chert	No	No	10/18/2008
RAN-ISO-125	AP16 Isolate	1 Flake CCS Chert	No	No	10/18/2008
RAN-ISO-126	AP16 Isolate	1 Core 1 Flake CCS Jasper	No	No	10/18/2008
RAN-ISO-129	AP16 Isolate	1 Flake Metasedimentary	No	No	10/18/2008
RAN-ISO-130	AP16 Isolate	1 Core 2 Flakes CCS Jasper	No	No	10/18/2008
RAN-ISO-132	AP16 Isolate	1 Flake CCS Jasper	No	No	10/19/2008
RAN-ISO-136	AP16 Isolate	1 Flake CCS Jasper	No	No	10/19/2008
RAN-ISO-137	AP16 Isolate	1 Flake CCS Jasper	No	No	10/20/2008
RAN-ISO-140	AP16 Isolate	1 Flake CCS Jasper	No	No	10/20/2008
RAN-ISO-141	AP16 Isolate	1 Flake CCS Jasper	No	No	10/20/2008
RAN-ISO-143	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/20/2008
RAN-ISO-144	AP16 Isolate	1 Flake CCS	No	No	10/21/2008
RAN-ISO-145	AP16 Isolate	2 Flakes 1 Bifacial flake, 1 Core CCS Jasper	No	No	10/21/2008
RAN-ISO-148	AP16 Isolate	2 Flakes CCS Jasper 1 Core CCS Chalcedony	No	No	10/21/2008
RAN-ISO-149	AP16 Isolate	1 Flake CCS Jasper	No	No	10/21/2008
RAN-ISO-150	AP16 Isolate	1 Flake CCS Chert	No	No	10/21/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
RAN-ISO-151	AP16 Isolate	5 Flakes CCS Jasper	No	No	10/21/2008
RAN-ISO-152	AP16 Isolate	1 Flake CCS Jasper	No	No	10/21/2008
RAN-ISO-153	AP16 Isolate	5 Flakes CCS Jasper	No	No	10/21/2008
RAN-ISO-156	AP16 Isolate	1 Core 3 Flakes CCS Jasper	No	No	10/21/2008
RAN-ISO-157	AP16 Isolate	1 Core CCS Jasper	No	No	10/21/2008
RAN-ISO-158	AP16 Isolate	3 Flakes CCS Jasper	No	No	10/22/2008
RAN-ISO-160	AP16 Isolate	1 Flake CCS Chalcedony	No	No	10/23/2008
RAN-ISO-161	AP16 Isolate	1 Core Quartzite	No	No	10/23/2008
RAN-ISO-162	AP16 Isolate	1 Biface Fragment CCS Jasper	No	No	10/23/2008
RAN-ISO-165	AP16 Isolate	1 Core 1 Flake Refit CCS Jasper	No	No	10/26/2008
RAN-ISO-166	AP16 Isolate	1 Flake 1 Biface CCS Jasper/Chalcedony	No	No	10/26/2008
RAN-ISO-167	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/26/2008
RAN-ISO-172H	AP16 Isolate	1 Complete amethyst Bottle base mark (EHMANN OLIVE OIL/EHMANN OLIVE OIL/OROVILLE, CALIFORNIA)	No	No	10/26/2008
RAN-ISO-174	AP16 Isolate	3 Flakes CCS Jasper	No	No	10/28/2008
RAN-ISO-176	AP16 Isolate	1 Flake CCS Chalcedony	No	No	10/28/2008
RAN-ISO-178	AP16 Isolate	3 Flakes CCS Jasper	No	No	10/28/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
RAN-ISO-184	AP16 Isolate	1 Flake CCS Jasper	No	No	10/28/2008
RAN-ISO-185	AP16 Isolate	1 Biface, 2 Flakes CCS Jasper	No	No	10/28/2008
RAN-ISO-187	AP16 Isolate	1 Flake CCS Jasper	No	No	10/30/2008
RAN-ISO-191	AP16 Isolate	1 Core CCS Jasper	No	No	10/22/2008
RAN-ISO-192	AP16 Isolate	1 Flake CCS	No	No	10/26/2008
RSS-ISO-001	AP16 Isolate	1 Flake CCS Jasper	No	No	10/8/2008
RSS-ISO-003	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/8/2008
RSS-ISO-004	AP16 Isolate	4 Flakes CCS Jasper	No	No	10/9/2008
RSS-ISO-007	AP16 Isolate	3 Flakes 1 Core fragment CCS Jasper	No	No	10/15/2008
RSS-ISO-010	AP16 Isolate	5 Flakes CCS Jasper	No	No	10/16/2008
RSS-ISO-012	AP16 Isolate	5 Flakes CCS Jasper	No	No	10/17/2008
RSS-ISO-019	AP16 Isolate	1 Biface fragment CCS Jasper	No	No	10/21/2008
RSS-ISO-022	AP16 Isolate	5 Flakes CCS Jasper	No	No	10/24/2008
SGB-ISO-001	AP16 Isolate	1 Flake CCS Jasper	No	No	8/5/2008
SGB-ISO-005	AP16 Isolate	1 Flake CCS Jasper	No	No	8/6/2008
SGB-ISO-008	AP16 Isolate	1 Flake CCS Jasper	No	No	8/6/2008
SGB-ISO-009	AP16 Isolate	1 Flake CCS Chalcedony	No	No	8/7/2008
SGB-ISO-011	AP16 Isolate	1 Sherd Southwest Grey with Black geometric pattern, 2 Flake CCS Jasper	No	No	8/8/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
SGB-ISO-012	AP16 Isolate	1 Flake CCS Chalcedony	No	No	8/8/2008
SGB-ISO-014	AP16 Isolate	5 Flakes CCS Jasper	No	No	8/10/2008
SGB-ISO-015	AP16 Isolate	1 Flake CCS Jasper	No	No	8/11/2008
SGB-ISO-016	AP16 Isolate	2 Flakes CCS Jasper	No	No	8/11/2008
SGB-ISO-018	AP16 Isolate	2 Flakes CCS Jasper	No	No	8/13/2008
SGB-ISO-019	AP16 Isolate	1 Flake CCS Jasper	No	No	8/13/2008
SGB-ISO-020	AP16 Isolate	1 Flake CCS Jasper	No	No	8/13/2008
SGB-ISO-021	AP16 Isolate	1 Flake CCS Jasper	No	No	8/13/2008
SGB-ISO-022	AP16 Isolate	1 Biface CCS Jasper	No	No	8/13/2008
SGB-ISO-023	AP16 Isolate	1 Piece of Debitage CCS Jasper	No	No	8/18/2008
SGB-ISO-025	AP16 Isolate	2 Flakes CCS Jasper	No	No	8/18/2008
SGB-ISO-026	AP16 Isolate	1 Flake CCS Jasper	No	No	8/18/2008
SGB-ISO-027	AP16 Isolate	1 Flake CCS Jasper	No	No	8/18/2008
SGB-ISO-029	AP16 Isolate	1 Flake CCS Jasper	No	No	8/19/2008
SGB-ISO-030	AP16 Isolate	4 Ceramic Sherds Brown buff	No	No	8/20/2008
SGB-ISO-031	AP16 Isolate	3 Flakes and 1 shatter CCS Jasper	No	No	8/20/2008
SGB-ISO-033	AP16 Isolate	3 Flakes CCS Jasper	No	No	8/20/2008
SGB-ISO-035	AP16 Isolate	4 Flakes CCS Jasper 1 Flake Obsidian	No	No	8/21/2008
SGB-ISO-039	AP16 Isolate	1 Flake CCS Jasper	No	No	8/22/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
SGB-ISO-040	AP16 Isolate	1 Flake CCS Jasper	No	No	8/22/2008
SGB-ISO-042	AP16 Isolate	1 Flake CCS Jasper	No	No	8/24/2008
SGB-ISO-043	AP16 Isolate	1 Flake CCS Jasper	No	No	8/24/2008
SGB-ISO-044	AP16 Isolate	1 Flake CCS Jasper	No	No	8/24/2008
SGB-ISO-045	AP16 Isolate	2 Flakes CCS Jasper	No	No	8/25/2008
SGB-ISO-095	AP16 Isolate	1 Flake CCS Jasper	No	No	10/2/2008
SGB-ISO-096	AP16 Isolate	1 Flake CCS Jasper	No	No	10/2/2008
SGB-ISO-098	AP16 Isolate	5 Flakes CCS Jasper/ Chalcedony	No	No	10/3/2008
SGB-ISO-100	AP16 Isolate	1 Flake CCS Jasper	No	No	10/3/2008
SGB-ISO-101	AP16 Isolate	2 Flakes,1 Core CCs Jasper	No	No	10/4/2008
SGB-ISO-102	AP16 Isolate	2 Flakes, 1 Biface CCS Jasper	No	No	10/4/2008
SGB-ISO-103	AP16 Isolate	2 Flakes 1 Projectile point base fragment (Side-notched) CCS Jasper	No	No	10/4/2008
SGB-ISO-105	AP16 Isolate	3 Flakes CCS Jasper/Chalcedony	No	No	10/4/2008
SGB-ISO-106	AP16 Isolate	3 Flakes CCS Jasper/Chalcedony/Chert	No	No	10/4/2008
SGB-ISO-107	AP16 Isolate	1 Projectile point base fragment CCS Jasper	No	No	10/4/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
SGB-ISO-108	AP16 Isolate	1 Flake CCS Jasper	No	No	10/4/2008
SGB-ISO-109	AP16 Isolate	2 Flakes CCS Jasper/Chalcedony	No	No	10/4/2008
SGB-ISO-110	AP16 Isolate	2 Flakes Jasper/Chalcedony	No	No	10/04/2008
SGB-ISO-111	AP16 Isolate	1 Flake CCS Jasper	No	No	10/4/2008
SGB-ISO-113	AP16 Isolate	2 Flakes CCS Jasper	No	No	10/5/2008
SGB-ISO-115	AP16 Isolate	3 Flakes 1 Core CCS Jasper/Chalcedony	No	No	10/6/2008
SGB-ISO-116	AP16 Isolate	1 Flake CCS Jasper	No	No	10/6/2008
SGB-ISO-117	AP16 Isolate	4 Flakes 1 Core CCS Jasper	No	No	10/6/2008
SGB-ISO-119	AP16 Isolate	5 Flakes CCS Jasper	No	No	10/6/2008
SGB-ISO-122	AP16 Isolate	1 Micro flake CCS Chert	No	No	10/6/2008
SGB-ISO-123	AP16 Isolate	4 Flakes CCS Jasper	No	No	10/6/2008
SGB-ISO-124	AP16 Isolate	1 Flake CCS Jasper	No	No	10/6/2008
SGB-ISO-128	AP16 Isolate	3 Flakes CCS Jasper	No	No	10/7/2007
SM-ISO-001	AP16 Isolate	1 Flake CCS Jasper	No	No	8/6/2008
SM-ISO-002	AP16 Isolate	1 Flake CCS Jasper	No	No	8/6/2008
SM-ISO-003	AP16 Isolate	1 Flake CCS Jasper	No	No	8/6/2008
SM-ISO-006	AP16 Isolate	3 Timbers/some wire w/cable attached	No	No	8/7/2008
SM-ISO-008	AP16 Isolate	1 Flake CCS Jasper	No	No	8/8/2008
SM-ISO-013	AP16 Isolate	1 Flake CCS Jasper	No	No	8/9/2008
SM-ISO-018	AP16 Isolate	1 Flake CCS Chert	No	No	8/9/2008

Table 5.7-8
Archaeological Isolates within the Solar One APE and 200-Foot Buffer

Site Designation	Site Classification(s)	Cultural Constituents	Potential for Subsurface Deposition	Recommended Eligible	Date Recorded
SM-ISO-023	AP16 Isolate	1 Flake CCS Jasper	No	No	8/9/2008
SM-ISO-024	AP16 Isolate	2 Flakes CCS Jasper	No	No	8/10/2008
SM-ISO-025	AP16 Isolate	1 Flake CCS Jasper	No	No	8/10/2008
SM-ISO-026	AP16 Isolate	3 Flakes CCS Jasper/Chalcedony	No	No	8/10/2008

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5.7.10.3 Historic Built Environment Field Survey Results

On August 19 and October 27 and 28, 2008, an intensive historic architecture survey was conducted to account for the properties that appeared to be older than 45 years (1963 or earlier) within the historic architecture APE, which included the Project footprint and a half-mile radius. Because the Project is proposed on federally administered land under the management of the BLM and required federal permits, cultural resources were considered in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. Section 106 requires federal agencies to consider the effects of their actions on properties listed in or eligible for the National Register of Historic Places (NRHP). Following completion of the survey, URS Architectural Historian Kirsten Erickson recorded the properties that appeared to be older than 45 years through the appropriate Department of Parks and Recreation (DPR) 523 series forms, and evaluated the properties for eligibility per the criterion of the NRHP. Properties known not to be older than 45 years were noted, but not formally recorded or evaluated. Results of the survey are depicted on Figures 6.4.1-2 Appendix Z Confidential Technical Report - Confidential Appendix A -Maps and Figures.

As part of the historic architecture survey, Ms. Erickson contacted San Bernardino County Land Use Services, City of Barstow Community Development department, and Mojave River Valley Museum on September 15, 2008 to identify cultural resources within a one-mile radius around the Project footprint listed pursuant to ordinance or recognized by a local historical society or museum. To date, no responses have been received from the local agencies and historical society.

In addition to these efforts, site-specific and general primary and secondary research was conducted at the University of California at Riverside, Rivera and Science libraries; the San Bernardino Archaeological Information Center at the San Bernardino County Museum; San Bernardino County Recorder's office; San Bernardino County Assessor's office; and numerous online resources. Thomas Taylor, Manager of Biological and Archaeological Services for Southern California Edison, provided site-specific information about the Pisgah Substation and the 12kV and 220kV transmission lines within the Project Area.

Historic maps were obtained from the University of California at Riverside science library and the Archaeological Information Center at the San Bernardino County Museum in Redlands. Maps obtained include 1955 15-minute U.S. Geological Survey quadrangles, five maps depicting the Old National Trails Highway, Punnett Brothers Map of San Bernardino County (1914), Kremmerer's map of San Bernardino County (1925), and Thomas Brothers Settlers and Miner's Map of San Bernardino County (1932). These maps were reviewed to identify possible unrecorded historical structures and archaeological sites within the APE and one-mile search radius (refer to Appendix Z – Confidential Technical Report - Confidential Appendix F).

Historic Built Environment Resources with the Solar One APE

Table 5.7-9
Built Environment Resources within the Solar One APE and ½-Mile Buffer

Resource Name	Year Constructed	Description of Resource and Major Elements	NRHP/CRHR Eligibility Recommendations	Management Recommendations
Hector Road	late 1930s to early 1950s	one-lane, graded dirt road	Not Eligible	None
Pacific Gas and Electric Pipeline	prior to 1955	natural gas pipeline	Not Eligible	None
Mojave Pipeline	prior to 1955	natural gas pipeline	Not Eligible	None
Old National Trails Highway	1912	remnants of historic road	Not Eligible	None
SCE 12kV power line	1961	pine T-post utility pole transmission line	Not Eligible	None
SCE 220-kilovolt transmission line	1937	single-circuit, steel lattice tower transmission line	Eligible under NRHP (A) and CRHR (1)	Avoidance
Pisgah Substation	1940	SCE switching station including switch gear, bus bars, and 3 structures used for relay and station battery equipment and storage	Not Eligible	None
Pisgah Crater Road	late 1930s to early 1950s	asphalt paved road	Not Eligible	None

Phase I Area

The intensive survey identified one previously unrecorded historic-age property within the Solar One Phase I project area (Table 5.7-9 and Figure 6.4.1-1 found Appendix Z – Confidential Technical Report – Confidential Appendix A – Maps/Figures). This property is Hector Road, which also is located in Phase II. Hector Road does not appear to be individually eligible for the NRHP or CRHR because it lacks historical significance. Hector Road was recorded and evaluated on the appropriate DPR 523 series forms (Appendix Z – Confidential Appendix E).

A wood pole power line is located adjacent to Hector Road in the Solar One Phase I Project area south of the BNSF Railroad. This power line is not historic-age (45 years old or older) and was not evaluated.

Hector Road

Hector Road currently is an I-40 interchange, which provides access to the project area. Hector Road extends for a short distance south of I-40 to U.S. Route 66. North of I-40, Hector Road has been realigned since its original construction, and much of the historic segment of the road between I-40 and the BNSF Railroad is not within the Solar One Project area.

The road in the vicinity of the I-40 interchange is a two-lane paved roadway. North of the I-40 interchange, Hector Road is reduced to a one-lane, graded, dirt roadway. An improved railroad crossing has been constructed at Hector Road, which remains locked with a gate and padlock and is only used by local traffic with access permissions. The improved crossing includes slightly sloped asphalt ramps that bring the road up to railroad grade and back down to road grade level and crossing arms.

From the BNSF Railroad, Hector Road continues northward about one mile to the northwest corner of Section 3, Township 8 North, Range 6 East, and then continues eastward along the section line for three miles. At the northeast corner of Section 1, Township 8 North, Range 6 East, Hector Road turns to the southeast and continues across sections 6 and 8 until its junction with the SCE 220kV transmission line road. This segment of the road is a one-lane, graded dirt road that appears to be maintained and frequently used. The route of Hector Road from the railroad to the transmission line road has not been modified since its original construction in the late 1930s or early 1950s. Sometime after 1955, Hector Road was extended about 0.5 mile southeast to the road that leads to the Black Butte manganese mine.

Based on site Surveys and historic research, Hector Road is recommended ineligible for listing in the NRHP and CRHR. Hector Road likely was constructed to provide access to mines in the project vicinity. The road also could have been used to transport construction materials to the SCE 220kV transmission line and the Pisgah Substation from the railroad. Hector Road is a modest example of a typical one-lane dirt graded rural road. It is not associated with any distinctive or significant events, persons, design/construction, or has the potential to yield important information about the past. The road is representative of typical construction, which has been well-documented in California and the West.

Phase II Area

The intensive survey identified four previously unrecorded historic-age properties within the Solar One Phase II Project area (Table 5.7-9). These properties are Hector Road, the Pacific Gas and Electric Pipeline, the Mojave Pipeline, and the newly discovered discontinuous segment of Old National Trails Highway. Of the four previously unrecorded historic-age properties identified in this area, one is recommended eligible for the NRHP and CRHR as a historical resource for the purposes of CEQA. The two natural gas pipelines and Hector Road do not appear to be individually eligible. The following is a summary of the historic-period properties that have been recorded and evaluated on the appropriate DPR 523 series forms (refer to Appendix Z –Confidential Appendix E). Hector Road also is located in Solar One Phase I and was discussed in the previous section; therefore, discussion of this resource is not repeated here.

Pacific Gas and Electric and Mojave Pipelines

Two of the resources are natural gas pipelines that run through the Solar One Phase II project area. Both of these pipelines were constructed prior to 1955; both are buried resources with no visible features in the Project area. In addition, the Advisory Council on Historic Preservation has exempted federal agencies from taking into account the effects of their undertakings on historic natural gas pipelines (Advisory Council on Historic Preservation 2002). A brief history of these pipelines is provided in Appendix Z - Confidential Technical Report Section 3). Neither pipeline would be affected by the Project and are not recommended as eligible for the NRHP or CRHR at this time. DPR 523 forms were not completed for either pipeline.

Old National Trails Highway

The fourth resource in the Solar One Phase II Project area is the Old National Trails Highway. The Old National Trails Highway was recorded and evaluated on the appropriate DPR 523 series forms in Appendix E. The Old National Trails Highway was established in 1912 and was the precursor to U.S. Route 66 in the Project area. It was abandoned in the 1930s when U.S. Route 66 was constructed to the south. Eight segments of the Old National Trails Highway were recorded in the Solar One Phase II Project area, as well as within the Pisgah Substation study area and the Access Roads Corridors and Bridge Crossing. At these locations, the road is a batched mix oiled road that varies in width—one segment is one to three feet wide, and the other seven segments are nine to ten feet wide. The condition of the road segments is poor. Most of the road surface is crumbled and cracked, and in places has eroded. Some segments are buried in sand, but were presumed to be intact.

The Old National Trails Highway is significant as an early automobile transportation route across the Mojave Desert and as an early route for the historically significant U.S. Route 66. It has, as part of the combined Route 66 resource, been determined eligible for the NRHP and CRHR under Criterion A and Criterion 1, respectively. Further study of the highway may yield important information about the highway, and it also is eligible for the NRHP and CRHR under Criterion D and Criterion 4, respectively. Research did not reveal any associations with distinctive or significant persons, and the road is a typical example of an early automobile roadway and most areas are in poor condition. The highway is recommended not eligible for the NRHP or CRHR under Criterion B (Criterion 2) or Criterion C (Criterion 3).

The determination above relates to the resource as a whole. Within the Project APE, the resource is isolated, segmented and in generally poor condition. In addition, the resource has lost integrity with regarding to setting as it adjacent to I-40. As such, the portion of this NRHP-eligible resource is recommended as not contributing to the overall significance of the resource and, therefore, impacts to the resource within the APE would not be an adverse effect.

Pisgah Substation Triangle Area

The intensive survey identified seven previously unrecorded historic age properties within the Pisgah Substation Triangle Area (Table 5.7-9; Figure 6.4.1-2 refer to Appendix Z – Confidential Technical Report - Appendix A - Maps and Figures). These properties include the SCE 12kV transmission line, the SCE 220kV transmission line, Pisgah Substation, Pisgah Crater Road, Old

National Trails Highway, Mojave Pipeline, and Pacific Gas and Electric Pipeline. Of the seven previously unrecorded historic-age properties, the SCE 220kV transmission line appears to be eligible for the NRHP and CRHR as historical resources for the purposes of CEQA. The SCE 12kV transmission line, Pisgah Substation, Pisgah Crater Road, the Mojave Pipeline, and the Pacific Gas and Electric Pipelines are not recommended as individually eligible. The following is a summary of the historic-period properties that have been recorded and evaluated on the appropriate DPR 523 series forms (Appendix Z – Confidential Technical Report – Confidential Appendix E). The Old National Trails Highway and the two pipelines were discussed in the previous sections.

Two additional steel tower transmission lines are located adjacent to the SCE 12kV transmission line in the Pisgah Substation Triangle Area. These transmission lines are not historic-age (45 years old or older) and were not evaluated.

Southern California Edison 12-Kilovolt Transmission Line

The SCE 12kV transmission line was constructed in 1961 as a rural distribution line. The line within the Project Area consists of fifteen 40-foot-tall utility poles, which are each 0.75 foot in diameter. The poles have a single T-post on the top with three ceramic insulators and three transmission lines. The poles are creosote-treated pine and each pole features an identification tag and an embossed nail on the left for height (40) and an embossed date nail (61) on the right. There also is an associated 207-foot-long historic transmission road and sparse historic trash in the vicinity of the transmission line.

The transmission line corridor is modest example of a pine T-post utility pole transmission line. It is not associated with any distinctive or significant events, persons, design/construction, or has the potential to yield important information about the past. The transmission line is representative of typical power line construction, which has been well-documented in California and the West. Based on site surveys and historic research, the SCE 12-kilovolt transmission line is recommended not eligible for listing in the NRHP and CRHR.

Southern California Edison 220-Kilovolt Transmission Line

The SCE 220kV transmission line is a single-circuit transmission line with two rows of steel lattice tower structures directly associated with early distribution of electricity, specifically that distributed from Hoover Dam (see below). The evenly-spaced tower structures are approximately 75-feet-tall and include three conductor wires, two static wires, and insulators. Each tower structure has a concrete footing. The transmission line is located in a rural setting, which consists of vacant private property and property administered by the BLM.

Construction the Hoover Dam started in 1931 and concluded in 1935 (Myers 1983). By 1936, the Hoover Dam began to produce power for community use, and SCE constructed the 220kV transmission line (also known as the Boulder to Chino line) from the Hoover Dam to bring power to its service areas in 1937 (personal communication, Thomas Taylor, Manager, Biological and Archaeological Resources, SCE, 18 September 2008; Myers 1983).

The transmission line corridor is a modest example of a lattice tower transmission line corridor. However, the transmission line is significant as one of the earliest SCE transmission lines to carry electricity from the Hoover Dam to its service areas in Southern California. The Southern

California Edison 220-Kilvolt transmission line is eligible for the NRHP and the CRHR under Criterion A (Criterion 1). Research did not reveal any associations with any important persons (Criterion B/Criterion 2), the transmission line is not of a significant or distinctive design (Criterion C/Criterion 3), and does not have the potential to yield important information (Criterion D/Criterion 4).

Pisgah Substation

The Pisgah Substation is a SCE switching station that was constructed in 1940 (personal communication, Thomas Taylor, Manager, Biological and Archaeological Resources, Southern California Edison, 18 September 2008). The switching station is a 210-by-333-foot station that sits on a graded dirt and gravel lot. The perimeter of the substation is enclosed by a chain-link fence, and the entrance to the substation faces southeast and is located along a graded transmission line road. A switching station is an intermediate station, which has incoming and outgoing power lines of the same voltage. Unlike other substations, a switching station does not transfer power from a higher voltage to a lower voltage, but instead works to control increases and decreases in voltage.

In addition to the equipment associated with the function of the substation, including switch gears and bus bars, the Pisgah Substation also has three buildings, which house the relay station and battery equipment. The largest of these buildings is a rectangular, brick building that faces southeast. The front of the building has steel-frame fixed and casement windows. The building is accessed on this side by a single entry door with 15 lights, which are accessed by concrete steps with a metal railing. The hipped roof is clad with asphalt shingles and clay tile.

The other two buildings are smaller and appear to be used for storage. The building located at the north corner of the substation is a wood-framed box-shaped structure with a hipped roof that has exposed rafter ends and is clad with clay tile. There is a wood roll-up door on the southeast side of the building, suggesting that is it used to store vehicles or larger equipment. The other building is located adjacent to the wood-framed building to the southwest and is a brick, box-shaped structure with a hipped roof that has exposed rafter ends and is clad with clay tile. The windows are steel frame casements and the building is accessed by a single entry wood door. All of the buildings are in good condition and appear to be in use.

The Pisgah Substation is a 1940 switching station located along the SCE 220kV transmission line that runs from the Hoover Dam to their service areas in southern California. The transmission line itself is significant as one of the early transmission lines that transported power produced at the Hoover Dam. However, the substation was constructed three years after the transmission line, and does not appear to be a significant component of the transmission line system. Research did not reveal any associations with distinctive or significant persons, and the substation is of a typical design for its era and is not a rare surviving example (personal communication, Thomas Taylor, Manager, Biological and Archaeological Resources, SCE, 18 September 2008). Further study of the substation is unlikely to yield important information about the past. Therefore, the Pisgah Substation is recommended not eligible for listing in the NRHP or CRHR or as a historical resource for purposes of CEQA.

Pisgah Crater Road

Pisgah Crater Road currently runs between the SCE 220kV transmission line road to the Pisgah Crater, a young volcanic cinder cone located south of the Project Area. U.S.G.S. 15-minute topographic quadrangles indicate that this road was extended sometime after 1955 because the map only depicts the road between Pisgah Crater south of U.S. Route 66 and a small segment north of U.S. Route 66 that terminates at the Atchison, Topeka, & Santa Fe Railroad. The segment of Pisgah Crater Road that is historic-age (45 years old or older) is paved with asphalt and is approximately 24 feet wide. The Pisgah Crater currently is being mined for aggregate and is located on private land. The road does not appear to be regularly maintained and likely is only sporadically used to access the mine.

Pisgah Crater is located on private land and much of the crater has been destroyed by mining. No records were found to indicate that the Pisgah Crater was ever a well-known tourist destination for U.S. Route 66 travelers like the better-known Amboy Crater, which is located east of the Pisgah Crater within the BLM-administered Mojave National Preserve. Research did not reveal any associates with distinctive or significant persons, and the roadway is of a common design. Further study of the road is unlikely to yield important information about the past. Therefore, Pisgah Crater Road is recommended as not eligible for listing the NRHP or CRHR or as a historical resource for the purposes of CEQA.

Access Road Corridors and Bridge Crossing

The intensive survey identified one previously recorded and two previously unrecorded historic age properties within the access road corridors and bridge crossing (Table 5.7-9; Figure 6.4.1-1 Appendix Z – Confidential Technical Report / Confidential Appendix A – Maps and Figures). These properties include the Old National Trails Highway, Mojave Pipeline, and Pacific Gas and Electric Pipeline. The Old National Trails Highway and the two pipelines were discussed in Section 5.7.2.2, and that information will not be repeated in this section. The DPR 523 series forms for all of these resources, except for the pipelines, are located in Appendix Z – Confidential Technical Report - Confidential Appendix E.

Historic Built Environment within ½-Mile Buffer

The intensive survey identified five previously unrecorded historic-age properties within ½ mile of the Solar One project area (Table 5.7-9). Of the five previously unrecorded historic-age properties, the SCE 220-kilvolt transmission line appears to be eligible for the NRHP and CRHR and is a historical resource for purposes of CEQA. The SCE 12-kilovolt transmission line, the Mojave Pipeline, the Pacific Gas and Electric Pipeline, and Pisgah Crater Road have been previously discussed in sections 5.7.2.2 and 5.7.2.3 and that information will not be repeated in this section.

A wood pole power line also is located adjacent to U.S. Route 66 within the ½ mile buffer. This power line is not historic-age (45 years old or older) and was not evaluated.

In addition to the five previously unrecorded historic-age properties within the ½ mile buffer, two previously recorded historic properties also are within this area. These properties are the

Atchison, Topeka, and Santa Fe Railroad [CA-SBR-6693H] and U.S. Route 66 [CA-SBR-2910H]. DPR 523 series update forms were completed for both of these resources to record these sites within the buffer area (Appendix Z – Confidential Technical Report - Confidential Appendix E). These forms also document four previously unrecorded bridge structures on U.S. Route 66. All four of the bridge structures on U.S. Route 66 retain sufficient historical integrity to be considered contributing elements to the highway. Thirteen previously unrecorded bridge structures on the Atchison, Topeka, and Santa Fe Railroad also were recorded. Six of these retain sufficient integrity to be considered contributing elements to the railroad. The other 7 are either modern replacement bridges or have been highly modified.

5.7.11 Native American Consultation

The Native American Heritage Commission (NAHC) was contacted on July 22, 2008 to request a search of the Native American Sacred Lands File (SLF) as an aid in determining the presence of Native American sacred sites within the Project APE (Appendix B). A list of Native American contacts that may have knowledge of known cultural resources or sacred sites within the Project APE was also requested.

The NAHC responded on July 24, 2008, and indicated a records search of the SLF "failed to indicate the presence of Native American cultural resources in the immediate Project Area." In addition to the response letter, the NAHC also provided a Native American contact list. Letters offering formal consultation were issued by the BLM Barstow Field Office on November 5, 2008. As of the date of report production, no correspondence has been received from the tribes (Appendix B).

5.7.12 Significance Criteria

The Class III Intensive Field Survey and reports for the Project were conducted in accordance with the CEQA, Public Resources Code, Section 21000 *et seq.*, and the CCR, Title 14, Chapter 3, Section 15000. Consideration of significance as an "historical resource" is measured by cultural resource provisions considered under CCR Section 15064.5 and 15126.4. Generally, a historical resource (these include the historic built environment and historic and prehistoric archaeological resources) is considered significant if it meets the criteria for listing on the CRHR. These criteria are set forth in CCR Section 15064.5, and include resources that:

- are associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- are associated with lives of persons important in our past;
- embody the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- have yielded, or may be likely to yield, information important in prehistory or history.

CCR Section 15064.5 and Section 21084.1 further states that a resource not listed in or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1(k), or identified in an historical resources survey can

still be considered a historical resource (as defined in PRC Section 5020.1[j] and 5024.1) by a lead agency.

Under CCR Section 15064.5(b), a project potentially would have significant impacts if it would cause a substantial adverse change in the significance of an historical resource (i.e., a cultural resource eligible to CRHR, or archaeological resource defined as a unique archaeological resource which does not meet CRHR criteria), or would disturb human remains. The types of substantial adverse changes include physical demolition, destruction, relocation, or alteration of the resource.

CCR Section 15064.5 also assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are also detailed under PRC Section 5097.98.

Impacts to "unique archaeological resources" are also considered under CEQA, as described under PRC 21083.2. A unique archaeological resource implies an archaeological artifact, object, or site about which it can be clearly demonstrated that – without merely adding to the current body of knowledge – there is a high probability that it meets one of the following criteria:

- The archaeological artifact, object, or site contains information needed to answer important scientific questions and there is a demonstrable public interest in that information.
- The archaeological artifact, object, or site has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- The archaeological artifact, object, or site is directly associated with a scientifically recognized important prehistoric or historic event or person.

A non-unique archaeological resource indicates an archaeological artifact, object, or site that does not meet the above criteria. Impacts to non-unique archaeological resources and resources which do not qualify for listing on the CRHR receive no further consideration under CEQA.

In many cases, determination of a resource's eligibility to the NRHP or CRHR (or its uniqueness) can be made only through extensive research. As such, the best alternative to preserve historic resources is the no action alternative; however, because this alternative is not always feasible, any project should consider alternatives or mitigation measures to lessen the effects to these resources. Where possible, to the maximum extent possible, impacts to resources should be avoided. If, as the Project proceeds, it proves impossible to avoid cultural resources, formal eligibility evaluation will be undertaken. If the resource meets the criteria of eligibility to the CRHR, it will be formally addressed under CCR Section 15064.5 and 15126.4.

5.7.13 Management Considerations/Recommendations

Of the 141 archaeological sites identified during the Class III Intensive Field Survey, 108 need further evaluation to determine eligibility under NRHP) under criterion: (d) Resources that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4), as well as the California Register of Historical Places as potentially significant; it has yielded or is likely to yield information important to prehistory or history (Section 15064.5). A total of 242 isolate archaeological findings occur with the Project APE and 200-foot archaeological buffer. The isolated findings are recommended not

eligible resources due to the lack research potential. No artifacts were collected during the intensive pedestrian survey.

Based on the Solar One Plan of Development for this project, these 108 archaeological resources are subject to direct impact from construction activities associated with the development of the Project. Of these, 110 are prehistoric, five are historic, and three are multi-component archaeological sites (see Table 5.7-10).

The built environment assessment identified 10 historic resources, two of which were previously recorded and evaluated under NRHP. Of the 10 built environment resources four are recommended and/or previously determined eligible/significant, including the two previously recorded resources. The eligible resources include CA-SBR-6693H, CA-SBR-2910H, Old National Trails Highway, 220kV Transmission Line, which occur in the Phase II, Pisgah Triangle, and the ½-mile buffer. The remaining six built environment resources are not considered eligible for NRHP and CRHR.

Indirect impacts to resources must also be considered, which include impacts to natural setting, viewshed, as well as the increased traffic/activity in the Project APE that may lead to unauthorized collecting of artifacts or defacing of resources in and around the Project APE.

As a result, avoidance of the eligible and warranted eligible resources is recommended below (Table 5.7-10). If avoidance is not feasible then a testing plan should be implemented to determine their eligibility under NRHP and CRHR. Testing of these resources may determine that many are not eligible for NRHR and CRHR, with no further management required. Subsequently, if testing identifies the resources to be eligible and avoidance is not feasible then a data recovery plan is warranted to mitigate the resource to less than significant levels.

5.7.13.1 Archaeological Sites Requiring Further Evaluation to Determine Eligibility

The table below provides a list of archaeological resources that need further evaluation to be determined eligible. These resources cover a total combined acreage of approximately 414 acres; 1.8 acres in Phase I, 378.6 acres in Phase II, and 32 acres in the Pisgah Substation Triangle area; 1 acre in the access road corridors and bridge crossing; 1 acre within the 200-foot archaeological buffer.

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-012	AP2 Lithic scatter	Phase I	0.8	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-024	AP13 Trails / Linear Features	Phase I	N/A	Insufficient information to assess NRHP and CRHR eligibility	Mitigate through further documentation
KRM-028	AP13 Trails / Linear Features	Phase I	N/A	Insufficient information to assess NRHP and CRHR eligibility	Mitigate through Further Documentation
RAN-011	AP2 Lithic Scatter	Phase I	0.04	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-007	AP2 Lithic scatter AP16 Other	Phase I	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-013	AP2 Lithic Scatter	Phase I	0.3	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-017	AP2 Lithic Scatter	Phase I	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-041	AP2 Lithic Scatter	Phase I	0.1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
SM-027	AP2 Lithic Scatter	Phase I	0.06	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-133	AP2 Lithic Scatter	Phase II	0.05	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-134/H	AH4 Privies / dumps / trash scatters AP2 Lithic Scatter	Phase II	0.3	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-136	AP2 Lithic Scatter	Phase II	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-139	AP2 Lithic Scatter	Phase II	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-140	AP2 Lithic Scatter	Phase II	1.1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-141	AP2 Lithic Scatter	Phase II	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-142	AP2 Lithic Scatter	Phase II	7	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-150	AP2 Lithic Scatter	Phase II	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-152	AP2 Lithic Scatter	Phase II	0.3	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-153	AP2 Lithic Scatter	Phase II	0.4	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-155H	AH4 Privies / dumps / trash scatters	Phase II	0.4	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
DRK-160	AP2 Lithic Scatter	Phase II	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-163H	AH4 Privies / dumps / trash scatters	Phase II	0.9	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
DRK-166	AP2 Lithic Scatter	Phase II	0.6	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-167	AP2 Lithic Scatter	Phase II	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-168H	AH4 Privies / dumps / trash scatters	Phase II	0.5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
DRK-170	AP2 Lithic Scatter	Phase II	0.4	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-171	AP2 Lithic Scatter	Phase II	0.04	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-173	AP2 Lithic Scatter	Phase II	8	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-174	AP2 Lithic Scatter	Phase II	1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-175	AP2 Lithic Scatter	Phase II	0.7	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-176/H	AH4 Privies / dumps / trash scatters AP2 Lithic Scatter	Phase II	0.3	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
DRK-177	AP2 Lithic Scatter	Phase II	0.06	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
DRK-178	AP2 Lithic Scatter	Phase II	0.5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-180	AP2 Lithic Scatter	Phase II	0.8	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-182	AP2 Lithic scatter	Phase II	0.5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-184	AP2 Lithic Scatter	Phase II	0.03	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
EJK-002	AP2 lithic scatter. AH4 privies / dumps / trash scatters	Phase II	0.5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
EJK-004	AP2 lithic scatter. AH4 privies / dumps / trash scatters	Phase II	2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
EJK-005	AP2 Lithic scatter	Phase II	0.06	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
EJK-009	AP2 lithic scatter	Phase II	26	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
KRM-002	AP2 Lithic scatter	Phase II	0.6	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-003	AP 2 lithic scatter	Phase II	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-008	AP 2 lithic scatter	Phase II	0.5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-133	AP2 lithic scatter	Phase II	4	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-135	AP2 lithic scatter	Phase II	14	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-153	AP2 lithic scatter	Phase II	1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-154	AP13 Trails/linear earthworks AP16 Other	Phase II	0.1	Insufficient information to assess NRHP and CRHR eligibility	Mitigate through further documentation
KRM-160	AP2 lithic scatter	Phase II	5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
KRM-164	AP2 lithic scatter	Phase II	1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
KRM-167	AP2 lithic scatter. AP8 cairn/rock feature	Phase II	3.3	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
KRM-170	AP2 lithic scatter. AP8 cairn/ rock feature	Phase II	21	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
LTL-008	AP2 lithic scatter	Phase II	0.7	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-009	AP2 lithic scatter	Phase II	1.1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-011	AP2 lithic scatter	Phase II	0.1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-012	AP2 lithic scatter	Phase II	0.004	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-015	AP 2 lithic scatter	Phase II	0.5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
LTL-016	AP 2 lithic scatter	Phase II	0.3	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-017	AP 2 lithic scatter	Phase II	0.09	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-018	AP 2 lithic scatter	Phase II	2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-019	AP 2 lithic scatter	Phase II	0.03	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-022	AP2 lithic scatter	Phase II	0.03	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
LTL-023	AP2 lithic scatter	Phase II	0.09	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-107	AP2 lithic scatter	Phase II	0.4	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-110	AP2 lithic scatter	Phase II	0.4	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
RAN-114	AP2 lithic scatter;	Phase II	10	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-116	AP2 lithic scatter	Phase II	0.4	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-118	AP2 lithic scatter	Phase II	6	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-120	AP2 Lithic scatter	Phase II	12.16	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-123	AP2 lithic scatter	Phase II	0.01	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-168	AP2 lithic scatter	Phase II	0.06	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-169	AP2 lithic scatter	Phase II	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-170	AP2 lithic scatter	Phase II	0.5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
RAN-171	AP2 lithic scatter	Phase II	0.08	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-173	AP2 lithic scatter	Phase II	10	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-175	AP2 lithic scatter	Phase II	0.01	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-177	AP2 lithic scatter	Phase II	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-179	AP2 lithic scatter	Phase II	0.1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-180	AP2 lithic scatter	Phase II	0.1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-181	AP2 lithic scatter	Phase II	0.01	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-183	AP2 lithic scatter. AH16 Other (rock cairn)	Phase II	0.5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
RAN-186	AP2 lithic scatter	Phase II	0.003	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RAN-188	AP2 lithic scatter	Phase II	0.1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-005	AP2 Lithic scatter	Phase II	0.7	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-006	AP2 Lithic scatter	Phase II	0.05	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-008	AP2 Lithic scatter	Phase II	0.5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-009	AP2 Lithic scatter	Phase II	0.07	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-011	AP2 Lithic scatter	Phase II	1.31	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-013	AP2 Lithic scatter	Phase II	0.31	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
RSS-014	AP2 Lithic scatter	Phase II	4	Test unit to be placed within each loci determined by individual loci density.	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
RSS-017	AP 2 Lithic scatter AP 8 Cairns /rockfeatures AP11 Hearth / pits AP 16 Other (cleared circles)	Phase II	5.16	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
RSS-018	AP 2 Lithic scatter	Phase II	2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-112/H	AP 2 Lithic Scatter AH 4 Privies / dumps / trash scatters	Phase II	25.24	Insufficient information to assess NRHP and CRHR eligibility.	Extended Class III Limited Testing to determine if there is subsurface deposition
SGB-114	AP 2 Lithic Scatter	Phase II	1.13	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-120	AP 2 Lithic Scatter	Phase II	0.44	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-127	AP 2 Lithic Scatter	Phase II	0.53	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
CA-SBR-1908	AP2 Lithic scatter, AP12 Quarry, AH4Privies / dumps / trash scatter	Phase II	119.06	Test unit to be placed within each loci determined by individual loci density.	Extended Class III Limited Testing to determine if there is subsurface deposition
CA-SBR-3876 (EJK-021)	AP 2 Lithic scatter	Phase II	3	Test unit to be placed within each loci determined by individual loci density.	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
CA-SBR-4681 (RAN 102)	AP 2 Lithic scatter	Phase II	6.2	Test unit to be placed within each loci determined by individual loci density.	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
CA-SBR-6528 (RSS-020)	AP 2 Lithic scatter	Phase II	12.06	Test unit to be placed within each loci determined by individual loci density.	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
C-SBR-6521	AP 2 lithic scatter AP8 cairns / rock features	Phase II	7	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
SGB-024	AP2 Lithic Scatter	Pisgah Substation Triangle Area	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SBG-032	AP2 Lithic Scatter	Pisgah Substation Triangle Area	0.08	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-034	AP2 Lithic Scatter	Pisgah Substation Triangle Area	0.1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*

Table 5.7-10
Table of Archaeological Sites Requiring Further Evaluation

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Eligibility Recommendations	Management Recommendations
SGB-037	AP2 Lithic Scatter	Pisgah Substation Triangle Area	0.03	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
SGB-038	AP2 Lithic Scatter	Pisgah Substation Triangle Area	0.2	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
CA-SBR-6512 and CA-SBR-6513 (SGB-028)	AP2 Lithic Scatter	Pisgah Substation Triangle Area	31	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-045	AP 2 Lithic Scatter	Access Roads Corridor	0.1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition CARIDAP*
DRK-110H	AH 4 Privies /dumps/ trash scatters	Access Roads Corridor	0.5	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition
DRK-021H	AH4 Privies / dumps / trash scatters	200ft Buffer	1	Insufficient information to assess NRHP and CRHR eligibility	Extended Class III Limited Testing to determine if there is subsurface deposition

5.7.13.2 Archaeological Sites Not Recommended Eligible

The table below provides a list of sites that are not considered eligible for NRHP and CRHR. These sites do not appear to have the potential for subsurface deposition, lack diagnostic and/or unique specimens; rather these sites are ubiquitous, and have been well documented throughout Southern California Desert regions and the Mojave. It is unlikely that these resources have the potential to yield additional data beyond that which has been documented through the recordation process in this study.

Table 5.7-11
Table of Archeological Sites Not Recommended Eligible

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Recommendations	Management Recommendations
DRK-023	AP2 Lithic Scatter	Phase I	0.01	Not Eligible	None
RAN-025	AP2 Lithic Scatter	Phase I	0.3	Not Eligible	None
RAN-035H	AH16 Historic cairn / land / mine claim	Phase I	N/A	Not Eligible	None
SGB-097	AP2 Lithic Scatter	Phase I	0.2	Not Eligible	None
SGB-099	AP2 Lithic Scatter AP11 Hearth/pits	Phase I	0.04	Not Eligible	None
SGB-104	AP2 Lithic Scatter	Phase I	0.03	Not Eligible	None
CA-SBR-4558H	AH9 Mines/quarries/ tailings AH4 Privies/dumps/trash scatters AH2 Foundations/ structure pads AH6 Water conveyance system AH10 Machinery AH16 Other	Phase I		Not Eligible	None
DRK-145	AP2 Lithic Scatter	Phase II	0.4	Not Eligible	None
KRM-137	AP2 lithic scatter	Phase II	0.1	Not Eligible	None
KRM-141	AP2 lithic scatter	Phase II	0.07	Not Eligible	None
RAN-101	AP2 lithic scatter AP11 Hearths / pits	Phase II	0.7	Not Eligible	None
RAN-128	AP2 lithic scatter	Phase II	0.8	Not Eligible	None
RAN-131	AP 2 Lithic scatter	Phase II	0.03	Not Eligible	None
RAN-138	AP2 Lithic scatter	Phase II	0.60	Not Eligible	None
RAN-139	AP 2 lithic scatter	Phase II	0.14	Not Eligible	None
RAN-146	AP2 lithic scatter	Phase II	0.006	Not Eligible	None
RAN-154	AP2 lithic scatter	Phase II	0.05	Not Eligible	None

Table 5.7-11
Table of Archeological Sites Not Recommended Eligible

Site Designation	Site Classification	Project Location	Acres	NRHP/CRHR Recommendations	Management Recommendations
RAN-155	AP2 lithic scatter AP11 hearths / pits	Phase II	1.6	Not Eligible	None
RAN-163	AP 2 lithic scatter	Phase II	0.4	Not Eligible	None
RAN-190	AP2-lihic scatter	Phase II	0.3	Not Eligible	None
SGB-118	AP 2 Lithic Scatter	Phase II	0.05	Not Eligible	None
CA-SBR-5600 (RAN-189)	AP 2 Lithic scatter	Phase II	4.6	Not Eligible	None
SGB-036H	AH4 Privies / Dumps / Trash Scatters	Pisgah Substation Triangle Area	0.0007	Not Eligible	None
DRK-111/H	AH 4 Privies / dumps/ trash scatters AP 2 Lithic Scatter	Access Roads Corridor	0.08	Not Eligible	None
DRK 112H	AH16 Other (Rock Cairn)	Access Roads Corridor	0.002	Not Eligible	None
DRK 113H	AH16 Other (Rock Cairn)	Access Roads Corridor	0.002	Not Eligible	None
DRK 114	AP 2 Lithic Scatter	Access Roads Corridor	0.002	Not Eligible	None
DRK-116	AP2 Lithic scatter	Access Roads Corridor	0.008	Not Eligible	None
DRK-001	AP2 Lithic scatter	200ft Buffer	0.1	Not Eligible	None
DRK-026	AP2 Lithic scatter	200ft Buffer	0.1	Not Eligible	None
RAN-108	AP2 Lithic scatter	200ft Buffer	0.254	Not Eligible	None

5.7.14 Direct and Indirect Effects

Direct impacts are typically associated with construction activity and have the potential to immediately alter, diminish, or destroy all or part of the character and quality of historic architecture and archaeological resources. Indirect impacts are related to the primary consequences of the completed project and can cause a change in the character or use of the built environment by the introduction of undesirable auditory or visual intrusions.

5.7.14.1 Archaeological Resources

The construction, operation, and maintenance of the Project are expected to result in direct and indirect impacts to 108 archaeological sites in which NRHP and CRHR eligibility is undermined. Management recommendations and mitigation measures have been provided that if followed appropriately will result in no direct or indirect effects to archaeological resources, within the Project.

Based on the Solar One Plan of Development for this project, there are 108 archaeological resources subject to direct impact from construction activities associated with the development of the Project. Of these, 110 are prehistoric, five are historic, and three are multi-component archaeological sites (see Table 5.7-11 above).

Direct impacts include: site destruction/disturbance of all or part of the site, isolation of site from its natural setting, and/or the introduction of physical, chemical or visual elements that are out-of-character with the archaeological resource and its setting. Indirect impacts include new access routes generated for the Project that may increase the potential for vandalism/looting of sites.

5.7.14.2 Built Environment

The assessment identified two previously recorded resources and two newly recorded resources that are eligible for the NRHP and the CRHR. The two previously recorded resources are U.S. Route 66 and the Atchison, Topeka, & Santa Fe Railroad, and the newly recorded resources are the Old National Trails Highway and SCE 220kV Transmission Line.

The approximately 9.2-mile-long segment of U.S. Route 66 (CA-SBR-2910H) is an active frontage road for I-40 in the project vicinity. The highway is listed in the NRHP and CRHR with contributing and non-contributing segments. There are no historical buildings associated with Route 66 in the study area, although historical buildings associated with U.S. Route 66 still exist in the nearby towns of Ludlow, located about 12 miles east of Pisgah, and in Newberry Springs, about 15 miles west of the Hector Road off-ramp. I-40 is located to the north of the highway in the Project vicinity. The south side of the highway is native desert. Four historic bridge structures were recorded in the ½-mile APE and all appear to be contributing elements to the highway.

U.S. Route 66 adjacent to the Project Area is a relatively intact segment of the roadway and retains historical integrity of design. However, modern intrusions have compromised its historical setting, including I-40, power lines, transmission lines, and an electrical substation. The Project would not have direct impacts on the highway, but the Solar One facilities would be visible from the roadway, which would have an indirect, visual impact. However, the visual

impacts would not result in significant impacts to the highway because its setting has already been altered by modern utilities and infrastructure.

The AT&SF Railroad (SBR-6693H) is considered eligible for the NRHP under Criterion A and CRHR under Criterion 1. The railroad has been upgraded within the Project APE and elsewhere to a modern facility and continues to be operated by the BNSF Railroad. Thirteen bridge features associated with the railroad were recorded within the ½-mile APE and six appear to be contributing elements to the railroad. The SCE 220-Kilovolt Transmission Line has been recommended as eligible for the NRHP under Criterion A and the CRHR under Criterion 1, because of its significance as one of the earliest transmission lines from the Hoover Dam to southern California. Towers, lines, and ancillary elements within the Project APE have been upgraded over time. The Project could cross both resources but would not use any of the railroad or transmission line rights-of-way and is not expected to result in any proximity impacts that that would impair the historical qualities that make the railroad and transmission line eligible for the NRHP and CRHR. The Solar One project is compatible with the utilitarian and industrial nature of these resources and would not adversely affect the viewsheds of either of these properties.

The Old National Trails Highway is considered eligible for the NRHP under Criterion A and CRHR under Criterion 1 because of its significance as a transportation route. Remnants of the highway were found in the Solar One Phase I and Phase II Project areas, and installation of the proposed solar facility could affect this resource. However, recording of the resource within the Project APE has resulted in the recommendation that this portion is not a contributing element to the overall eligible resources. As such, impacts to the resource would not be considered an adverse effect.

5.7.15 Cumulative Impacts

The Project is not expected to result in significant cumulative impacts to environmental resource areas, including, but not limited to, air quality, land use, cultural resources, water resources, or traffic during the construction or operation phases. There are no existing permits within the Project vicinity to determine cumulative impacts at this time. There are several pending permits for renewable energy projects, although none are currently permitted. Since these projects are not currently permitted there are no cumulative effects at this time for the Project. Should pending permits be approved cumulative impacts would need to be revisited.

There are approximately 22 pending renewable energy permits; of these 18 are for Solar Energy, two are for Wind Energy, and 2 are for both Solar and Wind. The pending permits encompass approximately 138,000 acres for Solar and 51,900 acres for Wind. The exiting Solar One Permit also includes the proposed Solar Three Project, which is adjacent to Solar One to the west. The cumulative effects of Solar One in relationship to Solar Three will be addressed in the Solar Three Cultural Section of the AFC and Confidential Technical Report. At this time Solar Three is conceptual and not yet approved.

As described in Section 5.7, Cultural Resources, the Project has the potential to affect cultural resources within the Areas of Potential Effect (APE). Of the 141 archaeological resources, 108 require further evaluation to determine eligibility under NRHP (D) and/or CRHR (4), the remaining 33 are not considered eligible under NRHP and/or CRHR criterion.

Cumulative impacts from the Project on local and regional cultural resources are limited because conditions and mitigation measures have been provided that would reduce potential impacts to a less than significant level in the event that an archaeological site is identified within the Project boundaries during construction. With proper implementation of the testing a mitigation measures provided the contribution of the Project is not anticipated to result in long-term cumulative effects. The potential effects of other reasonably foreseeable future projects are unknown as mitigation measures for such projects cannot be determined at this time.

5.7.16 Mitigation Measures

5.7.16.1 Avoidance

CUL-1: In instances where a Project facility must be placed within 100 feet of a known cultural resource eligible for inclusion on NRHR or CRHR, the cultural resource will be temporarily fenced or otherwise demarcated on the ground, and the area will be designated environmentally sensitive. Construction equipment will be directed away from the cultural resource and construction personnel will be directed to avoid entering the area. Where cultural resource boundaries are unknown, the protected area will include a buffer zone with a 100-foot radius. In some cases, additional archaeological work may be required to demarcate the boundaries of the cultural resource to ascertain whether the cultural resource can be avoided.

CUL-1: If avoidance is not feasible then a testing plan should be implemented to determine their eligibility under NRHP and CRHR. Testing of these resources may determine that many are not eligible for NRHR and CRHR, with no further management required. Subsequently, if testing identifies the resources to be eligible and avoidance is not feasible then a data recovery plan is warranted to mitigate the resource to less than significant levels.

5.7.16.2 Extended Class III Limited Testing

CUL-2 Sparse lithic scatters sites that are identified as meeting the CARIDAP criteria should be tested using this Program. The Program requires a minimum necessary number of Subsurface Exploratory Excavation Units (SEEU) 50 x 50 cm square or diameter based on the size of the site. If the site measures less that a $100m^2$ the minimum number of units required is one. If the site measures in between 100 and $500m^2$ the minimum number of units required is 2; between 500 and $2000m^2$ the minimum number of units required is 4; between 2000 and $5000m^2$ the minimum number of units is 6; between 5000 and $10000m^2$ the minimum number of unit required is 8. Sites larger than $10,000m^2$ that represent multiple loci of sparse lithic scatters should be tested by individual loci density in accordance with this Program.

CUL-2 Sites that are not defined as Sparse Lithic Scatters under the CARIDAP program should be tested with a combination of 1x1 meter units and 50cm diameter SEEUs based on site density to determine the vertical and horizontal extent of the site.

5.7.16.3 Mitigation/Data Recovery

CUL-3: If further evaluation determines a Cultural Resource within the Solar One APE and buffers is considered eligible for NRHP or CRHR avoidance will again be recommended. If avoidance is not feasible a formal research design for data recovery should be developed and implemented.

CUL-3: Develop a Research Design prior to implementation of a Data Recovery Plan. The Data Recovery Plan shall entail an excavation strategy designed to recover a representative data sample of the site. The Data Recovery Plan shall include an excavation Plan, artifact processing and analyses and final curation of the collection. Typically, Data Recovery Plans serves to extrapolate data potential of a given archaeological site, which often mitigates the site to less than significant levels.

5.7.16.4 Preconstruction Assessment and Construction Training

CUL-4: A qualified professional archaeologist shall be retained to observe all ground-disturbing activities associated with the Project. Ground disturbing activities include clearing, grubbing, grading, and trenching within the Project Area. The archaeological monitor shall visit the Project Area prior to commencement of construction activities to become familiar with site conditions. The archaeological monitor shall attend the pre-construction meeting and work with the County of San Bernardino, the client, and construction management staff to suspend or redirect construction activities if cultural materials are encountered. The archaeological monitor shall also provide training to appropriate construction personnel on the site to explain the importance of and legal basis for the protection of significant archaeological resources.

5.7.16.5 Archaeological Monitoring

CUL-5: In the event cultural resources are encountered prior to or during construction activities, including subsurface excavation, construction activities in the immediate vicinity of the identified resource shall be halted and a qualified archaeologist shall identify the nature and boundary of the finds and assess whether the proposed activities will impinge upon a cultural resource. Routes of any access roads that must be built or graded that are outside of areas previously surveyed for cultural resources shall be subjected to archaeological survey prior to construction. In the event the resource is identified as a potentially significant cultural resource, planned construction activities shall be modified to avoid the resource if feasible. If it is not feasible to avoid the resource, the archaeologist shall identify the proper course of testing, excavation, recovery, and documentation to be undertaken in order to reduce project related impacts to a less than significant level. In the event that archaeological resources are discovered during the course of construction activities related to the Project, grading and/or excavation activities within 100 feet of the potentially significant resource shall be monitored by a qualified archaeologist.

5.7.16.6 Resource Recordation and Evaluation

CUL-6: The archaeological monitor shall follow accepted professional standards in recording any discovery and shall submit applicable Department of Parks and Recreation forms to the San Bernardino County Museum Archaeological Information Center. If the discovery is deemed not significant by qualified senior cultural resources staff, construction activities may proceed. Should a potentially significant cultural resource be encountered during monitoring, evaluation of this resource shall be required to determine significance. Significant cultural resources impacted by the Project would require additional mitigation, which may include data recovery. A recovery of a sample of the deposit from which the archaeologist can define scientific data to address archaeological research questions is considered an effective mitigation measure. A mitigation plan shall be prepared and carried out qualified staff. The mitigation program shall be carried out as quickly as possible to avoid construction delays. Construction may resume onsite as soon as the field data collection phase of any data recovery program is completed.

5.7.16.7 Provision for Encountering Human Remains

CUL-7: If human remains are encountered, State Health and Safety Code Section 7050.5 state that no further disturbance shall occur until the County Coroner has made necessary findings as to origin and disposition of the remains pursuant to Public Resources Code Section 5097.98. The following actions must be taken in the event that human remains are discovered on Federal/Private/State land:

1) Stop work immediately and contact the County Coroner must be notified immediately of the find and the BLM archaeologist shall be notified concurrently.

2) The Coroner has two working days to examine human remains after being notified by the responsible person. If the remains are determined to be prehistoric of Native American origin, the BLM will notify the Native American Heritage Commission, ;

3) The Native American Heritage Commission will immediately notify the person it believes to be the most likely descendent of the deceased Native American. With the permission of the landowner or agency or an authorized representative, the MLD may inspect the site of the discovery; and

4) The most likely descendent makes recommendations to the owner, or representative, for the treatment or disposition, with proper dignity, of the human remains and grave goods.

If the commission is unable to identify a descendent, or the descendent identified fails to make a recommendation, or the landowner rejects the recommendations of the descendent and the mediation provided for in subdivision (k) of Section 5097.94 fails to provide measures acceptable to the landowner, the landowner or his or her authorized representative shall reinter the human remains and items associated with the Native American burial(s) with appropriate dignity on the property in a location not subject to further subsurface disturbance.

Human remains are not anticipated within the Project given the absence of a prehistoric deposit. If human remains are encountered, construction activities shall be immediately halted in the immediate vicinity of the discovery. The Project supervisor shall immediately contact the county coroner, and the Applicant. If the remains are Native American, the NAHC shall be contacted. The NAHC is required to determine the most likely descendant, notify that person, and request that they inspect the burial and make recommendation for treatment and removal.

CUL-7 With regards to human remains discovered on Federal Lands (BLM), protocols set-forth by the National Graves and Repatriation Act (NAGRPA) must be followed by the Federal Agent responsible. The BLM will comply with all NAGPRA protocols regarding excavation and inadvertent discoveries of human remains. See LORS listed below for NAGPRA.

5.7.16.8 Laboratory Analysis and Curation

CUL-8: In the event that cultural materials are recovered during evaluation/testing, data recovery, and or construction related monitoring, artifacts shall be bagged and catalogued in the field, analyzed in the laboratory, and processed for curation according to the requirements of 36 CFR 79. No artifacts were collected during the Class III Intensive Field Survey.

Cultural materials shall be analyzed in order to characterize the resource(s) and their association to existing regional chronologies. The materials, and the contexts from which they were sampled, shall also be evaluated with regard to the eligibility criteria for inclusion on the NRHP and/or CRHR.

The objectives of laboratory processing and analysis are to determine to the extent possible the date, function, cultural affiliation and significance of the archaeological sites, and to prepare artifacts for permanent curation. Artifacts shall be processed (*i.e.,* cleaned, catalogued, and analyzed) according to the Secretary of the Interior's Standards and Guidelines for Curation (36 CFR 79). Artifacts shall be gently washed using tap water and a soft toothbrush. Delicate and/or unstable materials, such as decayed metal and organic material, shall be carefully dry-brushed with a soft toothbrush. After drying, artifacts shall be analyzed, catalogued, and bagged into archival quality packaging. The cataloging and labeling of bagged artifacts will be done according to provenience and type. Artifacts shall have acid-free paper labels with full provenience information, including the state site number, catalog number, test excavation unit (TEU), stratum or level, and date. Artifact information shall be entered into a customized computer-based application.

All artifacts, field records, monitoring logs, and photographs shall be curated with the collection per the BLM request and instructions. Cultural materials/samples shall be placed in appropriately labeled boxes for temporary storage at a qualified archaeological laboratory while being analyzed, processed, and prepared for curation. As part of mitigation requirements, final curation shall be at a federally recognized curation facility funded by the client.

5.7.17 LORS Compliance

The Project will be consistent with all applicable laws, ordinances, regulations, and standards (LORS). Any cultural resources potentially affected by the Project are subject to compliance with the provisions outlined in CEQA/CRHR. If a cultural resource is discovered during construction, and cannot be avoided, a program of site evaluation will be undertaken to ascertain site significance under CEQA/CRHR. All applicable LORS are summarized below is Table 5.7-12:

Table 5.7-12
Summary of Federal LORS

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Federal				
National Historic Preservation Act of 1966 as amended, Public Law 102-575	Requires identification, evaluation, preservation, and mitigation of effects to historic properties that are listed or eligible for inclusion on the National Register of Historic Places.	Section 5.7.11.1 CUL-1	BLM; State Historic Preservation Office	James Shearer Archaeologist Barstow Field Office 2601 Barstow Road Barstow, CA 92310 760-252-6034
Archaeological Resources Protection Act of 1979 as amended, Public Law 96-95	Provides for the protection of archaeological resources and sites that are on public lands and Indian lands.	Section 5.7.11.1 CUL-1	BLM	James Shearer
Federal Land Policy and Management Act of 1976 as amended, Public Law 94-579	Establishes policies and goals to be followed in administration of public lands by the Bureau of Land Management to include preservation of historic and archaeological resources.	Section 5.7.11.1 CUL-1	BLM	James Shearer

Table 5.7-12
Summary of Federal LORS

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Native American Graves Protection and Repatriation Act, Public Law 101-601	Requires federal agencies and institutions that receive federal funding to return Native American cultural items and human remains to their respective peoples. Cultural items include funerary objects, sacred objects, and objects of cultural patrimony.	Section 5.7.11.7 CUL-7	BLM	James Shearer
Antiquities Act of 1906, as amended	Prescribes penalties for the theft or destruction of archaeological resources on public land and establishes procedure for issuance of permits for the conduct of research on cultural resources on public land.	Section 5.7.11.1 CUL-1	BLM	James Shearer

Table 5.7-12
Summary of Federal LORS

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Executive Order No. 11593: Protection And Enhancement Of The Cultural Environment, 1971	Requires Federal agencies to administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations, initiate measures necessary to direct their policies, plans, and programs in such a way that federally owned sites, structures, and objects of historical, architectural, or archaeological significance are preserved, restored, and maintained and institute procedures to assure that Federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures, and objects of historical, architectural, or archaeological significance.	Section 5.7.11.1 CUL-1	BLM	James Shearer
National Environmental Policy Act of 1969, as amended, Public Law 91-190	Requires the analysis of the effect of federal undertakings on the environment to include the effect on cultural resources.	Section 5.7.11.1 CUL-1	BLM	James Shearer

Table 5.7-12
Summary of Federal LORS

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Public Law 106-45 An Act of 1999 HR 66	To preserve the cultural resources of the Route 66 corridor and to authorize the Secretary of the Interior to provide assistance	Section 5.7.11.1 CUL-1	BLM	James Shearer
State Jurisdiction				
The Warren-Alquist Act 1974, as amended	Requires cultural, historic, and aesthetic resources be taken into account in consideration of an Application for Certification. Requires that a portion of any such resources on public land be set aside for public access.	Section 5.7.11.1 CUL-1	CEC	Michael McGuirt Heritage Resources Analyst California Energy Commission Energy Facilities Siting Division Environmental Office 1516 9th Street, MS 40 Sacramento, CA 916-814-5512 916-654-4870
CEQA of 1970, as amended	Applies to discretionary projects causing a significant effect on the environment and a substantial adverse change in the significance of an historical or archaeological resource.	Section 5.7.11.1 CUL-1	CEC	Michael McGuirt

Table 5.7-12
Summary of Federal LORS

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
California PRC Section 5020-5029.5	Establishes the CRHR criterion, and creates the California Historic Landmarks Committee and authorizes the Department of Parks and Recreation to designate registered Historical Landmarks and registered Points of Historical Interest; establishes criteria for the protection and preservation of historic resources.	Section 5.7.11.1 CUL-1	CEC; State Historic Preservation Office; Department of Parks and Recreation	Michael McGuirt Milford Wayne Donaldson Fellow of the American Institute of Architects, State Historic Preservation Officer California Department of Parks and Recreation Office of Historic Preservation 1416 9th Street, Room 1442 Sacramento, CA 95814 P.O. Box 942896 Sacramento, CA 94296-0001
Senate Bill 922 (Ducheny 2005)	Exempts from California Public Records Act Native American graves, cemeteries, archaeological site information, and sacred places in the possession of the Native American Heritage Commission and other state or local agencies.	Section 5.7.11.1 CUL-1	CEC	Michael McGuirt Larry Myers Native American Heritage Commission Executive Secretary 915 Capitol Mall, Room 364 Sacramento, CA 95814 916-653-4082
Senate Bill 18 (Burton 2004)	Protection and preservation of Native American Traditional Cultural Places during city and county general plan development.	Section 5.7.11.1 CUL-1	CEC	Michael McGuirt

Table 5.7-12
Summary of Federal LORS

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Senate Concurrent Resolution Number 87 (1994)	Provides for the identification and protection of traditional Native American resource gathering sites on state land.	N/A	CEC	Michael McGuirt
Administrative Code, Title 14, Section 4307	No person shall remove, injure, deface, or destroy any object of paleontological, archaeological, or historical interest or value.	Section 5.7.10.1 CUL-1	CEC	Michael McGuirt
Government Code, Sections 6253, 6254, 6254.10	Disclosure of archaeological site information is not required for records that relate to archaeological site information maintained by the Department of Parks and Recreation, the State Historical Resources Commission, or the State Lands Commission.		CEC	Michael McGuirt

Table 5.7-12
Summary of Federal LORS

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Health and Safety Code, Section 7050.5	Requires construction or excavation stopped near human remains until a coroner determines whether the remains are Native American; requires the coroner to contact the NAHC if the remains are Native American.	Section 5.7.11.7 CUL-7	CEC; County Coroner	Michael McGuirt Gary Penrod San Bernardino County Sheriff Coroner 175 South Lena Road San Bernardino, CA 92415 909-387-2978
Health and Safety Code, Section 7051	Establishes removal of human remains from internment, or from a place of storage while awaiting internment or cremation, with the intent to sell them or to dissect them with malice or wantonness as a public offense punishable by imprisonment in a state prison.	Section 5.7.11.7 CUL-7	CEC; County Coroner	Michael McGuirt Gary Penrod
Health and Safety Code, Section 7052	States that willing mutilation of, disinterment of, removal from a place of disinterment of, and sexual penetration of or sexual contact with any remains known to be human are felony offenses.	Section 5.7.11.7 CUL-7	CEC; County Coroner	Michael McGuirt Gary Penrod
Penal Code, Title 14, Section 622.5	Misdemeanor offense for any person, other than the owner, who willfully damages or destroys archaeological or historic features on public or privately owned land.	Section 5.7.11.1 CUL-1	CEC	Michael McGuirt

Table 5.7-12
Summary of Federal LORS

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
PRC 5097-5097.6	Provides guidance for state agencies in the management of archaeological, paleontological, and historical sites affected by major public works project on state land.	Section 5.7.11 CUL-1 through CUL-8	CEC	Michael McGuirt
PRC 5097.9-5097.991	Establishes regulations for the protection of Native American religious places; establishes the Native American Heritage commission; California Native American Remains and Associated Grave artifacts shall be repatriated; notification of discovery of Native American human remains to a most likely descendent.	Section 5.7.11.1 CUL-1 Section 5.7.11.7 CUL-7	CEC	Michael McGuirt
CCR Section 1427	Recognizes that California's archaeological resources are endangered by urban development; the Legislature finds that these resources need preserving; it is a misdemeanor to alter any archaeological evidence found in any cave, or to remove any materials from a cave.	Section 5.7.11.1 CUL-1	CEC	Michael McGuirt

Table 5.7-12
Summary of Federal LORS

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
Senate Concurrent Resolution Number 43	Requires all state agencies to cooperate with programs of archaeological survey and excavation, and to preserve known archaeological resources whenever reasonable.	Section 5.7.11.1 CUL-1	CEC	Michael McGuirt
LOCAL JURISDICTION				
County of San Bernardino General Plan, Section V Conservation Element	Goal CO 3: The County will preserve and promote its historic and prehistoric cultural heritage. Goal CO 4: Protect Cultural and Paleontological resources within the Mountain Region. Goal CO 6: Protect Cultural and Paleontological resources within the Desert Region.	Section 5.7.11.1 CUL-1	San Bernardino County Planning Department	Julie Rynerson Rock Director San Bernardino Office 385 N Arrowhead Avenue San Bernardino CA 92415 (909) 387-8311
City of Barstow General Plan Cultural Resources Element	Goal IV.1: The City shall actively support cultural facilities and activities. Goal IV.2: Strive to preserve and protect important features and sites (historic, archaeological and paleontological) as defined under this Element's Cultural Resources Management Plan, from degradation and destruction.	Section 5.7.11.1 CUL-1	City of Barstow Planning Department	Mike Massimini Associate City Planner City Hall 220 E. Mountain View St. Suite A Barstow, CA 92311 760-255-5152

Table 5.7-12
Summary of Federal LORS

LORS	Requirements	Conformance Section	Administering Agency	Agency Contact
City of Barstow Municipal Code, Title 19, Chapter 31	Establishes policies regarding City's historic resources district, the city's preservation officer, and alternations and use of historic resources.	Section 5.7.11.1 CUL-1	City of Barstow Planning Department	Mike Massimini Associate City Planner City Hall 220 E. Mountain View St. Suite A Barstow, CA 92311 760-255-5152

5.7.17.1.1 Federal

This Project is considered a federal undertaking, and requires conformance with the National Environmental Policy Act (NEPA). NEPA requires the federal government to use all practicable means to preserve important historic, cultural, and natural aspects of our national heritage. In addition to compliance with NEPA, the Project is being prepared in conformance with Section 106 and 110 of the NHPA, as amended. Section 106 requires federal agencies with either direct or indirect jurisdiction over a proposed undertaking to take into account the effect of the undertaking on any historic property that is NRHP –listed or –eligible. Section 110 requires federal agencies to assume the responsibility for the preservation of historic properties controlled by any them. Historic properties are defined as prehistoric and historic sites, buildings, structures, districts, and objects included in, or eligible for inclusion in the NRHP, as well as artifacts, records, and remains related to such properties (NHPA §301[5]). 36 CFR §800 stipulates that the State Historic Preservation Officer (SHPO) must be consulted to determine the eligibility of a historic property for listing in the NRHP. Under 36 CFR §60.4, cultural resources may be eligible for nomination to the NRHP if they "... possess integrity of location, design, setting, materials, workmanship, feeling and association..." and if these resources are either associated with (A) "significant themes in our Nation's history," or (B) "significant persons in our Nation's history," or if they (C) "embody distinctive construction characteristics or works of a master," or if they (D) "have yielded or have the potential to yield information important to history or prehistory." These resources can be significant at either the state or national level.

5.7.17.1.2 State

According to California Public Resources Code (PRC) §5020.1, a historic resource includes objects, buildings, structures, sites, areas, places, records, or manuscripts which are historically or archaeologically significant, or are significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. PRC§5024.1 established the California Register of Historical Resources (CRHR), in which historical resources can be nominated by state and local agencies as well as private groups and

citizens in an effort to protect historic properties from substantial adverse change. A historic resource may be eligible for the CRHR if it meets the requirements of PRC§5024.1(c):

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important to prehistory or history.

PRC§5024.1(e)(4) further establishes that the CRHR may include any historical resources or historic districts designated or listed as city or county landmarks or historic properties or districts pursuant to any city or county ordinance as long as the nominating process is in accordance with the California Register criteria. Table 5.7-6 summarizes the cultural resources state-level LORS that may be applicable to the Project.

5.7.17.1.3 Local

The County of San Bernardino has specific LORS, which also determine the treatment of cultural resources identified and recorded in the County of San Bernardino. These regulations are codified are within Title 8, Division 5, Chapter 3, Article 3, §85.03001, §85.030305, §85.030310, and §85.030315 (Readopted Ordinance 3341; Amended Ordinance 3420). Furthermore, additional County policies which may be applicable are also described in Title 6, Division 3, Chapter 11, §63.1120 and Title 8, Division 12, Chapter 3, §812.03175. Table 5.7-12 summarizes the local-level LORS.

5.7.17.1.4 Agencies and Agency Contacts

Agencies with jurisdiction to issue applicable permits and/or enforce LORS related to cultural resources are shown in Table 5.7-13.

Table 5.7-13
Agency Contact List for LORS

	Agency	Contact	Address	Telephone
1	Bureau Of Land Management	Rolla Queen	22835 Calle San Juan De Los Lagos Moreno Valley, CA 92553	951-697-5386
2	Bureau Of Land Management	James Shearer	2601 Barstow Road Barstow, CA 92310	760-252-6034
3	California Energy Commission	Michael McGuirt	1516 9th Street Sacramento, CA 95814-5512	916-654-4870

Table 5.7-13
Agency Contact List for LORS

	Agency	Contact	Address	Telephone
4	State Historic Preservation Office Department of Parks and Recreation Office of Historic Preservation	Milford Wayne Donaldson, FAIA	1416 9th Street, Room 1442-7 Sacramento, CA 95814 P.O. Box 942896 Sacramento, CA 94296-0001	(916) 653-6624
5	San Bernardino County Sheriff/Coroner	Gary Penrod	175 South Lena Road San Bernardino, CA 92415	909-387-2978
6	Native American Heritage Commission	Larry Myers Executive Secretary	915 Capitol Mall, Room 364 Sacramento, CA 95814	916-653-4082
	County of San Bernardino Land Use Services Department	Julie Rynerson Rock	385 N. Arrowhead Avenue – 1st Floor San Bernardino, CA 92415-0182	909- 387-8311

5.7.17.1.5 Permits Required and Permitting Schedule

As shown in Table 5.7-14, all Cultural Resource work was conducted under BLM Permits listed below. URS is fieldwork authorization permit is in effect until December 2009.

Table 5.7-14
Applicable Permits

Responsible Agency	Permit/Approval	Schedule
Bureau of Land Management	State wide permit CA-0611 issued to URS	April 27, 2006
Bureau of Land Management	Fieldwork Authorization to Conduct Specific Cultural Resources Work FA-680-08-26	July 2008 to December 2009

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Adequacy Issue: Adequate ____ Inadequate ____ **DATA ADEQUACY WORKSHEET** Revision No. 0 Date ____

Technical Area: **Cultural Resources** Project: SES Solar One Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	5.7.5.7 5.7.5.8 5.7.15 5.7.16 5.7.17		
Appendix B (g) (2) (A)	A summary of the ethnology, prehistory, and history of the region with emphasis on the area within no more than a 5-mile radius of the project location.	5.7.6 5.7.7 5.7.8		

Adequacy Issue: Adequate ____ Inadequate ____ **DATA ADEQUACY WORKSHEET** Revision No. 0 Date ____

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Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (2) (B)	The results of a literature search to identify cultural resources within an area not less than a 1-mile radius around the project site and not less that than one-quarter (0.25) mile on each side of the linear facilities. Identify any cultural resources listed pursuant to ordinance by a city or county, or recognized by any local historical or archaeological society or museum. Literature searches to identify the above cultural resources must be completed by, or under the direction of, individuals who meet the Secretary of the Interior's Professional Standards for the technical area addressed. Copies of California Department of Parks and Recreation (DPR) 523 forms (Title 14 CCR §4853) shall be provided for all cultural resources (ethnographic, architectural, historical, and archaeological) identified in the literature search as being 45 years or older or of exceptional importance as defined in the National Register Bulletin Guidelines, (36CFR60.4(g)). A copy of the USGS 7.5' quadrangle map of the literature search area delineating the areas of all past surveys and noting the California Historical Resources Information System (CHRIS) identifying number shall be provided. Copies also shall be provided of all technical reports whose survey coverage is wholly or partly within .25 mile of the area surveyed for the project under Section (g)(2)(C), or which report on any archaeological excavations or architectural surveys within the literature search area.	5.7.10.1 Confidential Appendix Z-Confidential Technical Report-Confidential Appendices		

Adequacy Issue: Adequate ____ Inadequate ____ **DATA ADEQUACY WORKSHEET** Revision No. 0 Date ____

Technical Area: **Cultural Resources** Project: SES Solar One Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (2) (C)	The results of new surveys or surveys less than 5 years old shall be provided if survey records of the area potentially affected by the project are more than five (5) years old. Surveys to identify new cultural resources must be completed by (or under the direction of) individuals who meet the Secretary of the Interior's Professional Standards for the technical area addressed. New pedestrian archaeological surveys shall be conducted inclusive of the project site and project linear facility routes, extending to no less than 200' around the project site, substations and staging areas, and to no less than 50' to either side of the right-of-way of project linear facility routes. New historic architecture field surveys in rural areas shall be conducted inclusive of the project site and the project linear facility routes, extending no less than .5 mile out from the proposed plant site and from the routes of all above-ground linear facilities. New historic architecture field surveys in urban and suburban areas shall be conducted inclusive of the project site, extending no less than one parcel's distance from all proposed plant site boundaries. New historic architecture field reconnaissance ("windshield survey") in urban and suburban areas shall be conducted along the routes of all linear facilities to identify, inventory, and characterize structures and districts that appear to be older than 45 years or that are exceptionally significant, whatever their age. A technical report of the results of the new surveys, conforming to the Archaeological Resource Management Report format (CA Office of Historic Preservation Feb 1990), which is incorporated by reference, shall be separately provided and submitted (under confidential cover if archaeological site locations are included).	5.7.10.2 5.7.10.3 Confidential Appendix Z		

Adequacy Issue: Adequate ____ Inadequate ____ **DATA ADEQUACY WORKSHEET** Revision No. 0 Date ____

Technical Area: **Cultural Resources** Project: SES Solar One Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (2) (C) cont.	Information included in the technical report shall also be provided in the Application for Certification, except that confidential information (archaeological sites or areas of religious significance) shall be submitted under a request for confidentiality pursuant to Title 20, California Code of Regulations, § 2501 et seq. At a minimum, the technical report shall include the following:	Confidential Appendix Z		
Appendix B (g) (2) (C) (i)	The summary from Appendix B (g)(2)(A) and the literature search results from Appendix B (g)(2)(B);	5.7.10.1		
Appendix B (g) (2) (C) (ii)	The survey procedures and methodology used to identify cultural resources and a discussion of the cultural resources identified by the survey;	5.7.10.2		
Appendix B (g) (2) (C) (iii)	Copies of all new and updated DPR 523(A) forms. If a cultural resource may be impacted by the project, also include the appropriate DPR 523 detail form for each such resource;	Confidential Appendix Z-Confidential Technical Report-Confidential Appendices		
Appendix B (g) (2) (C) (iv)	A map at a scale of 1:24,000 U.S. Geological Survey quadrangle depicting the locations of all previously known and newly identified cultural resources compiled through the research required by Appendix B (g)(2)(B) and Appendix B (g)(2)(C) (ii); and	Confidential Appendix Z-Confidential Technical Report-Confidential Appendix A-Maps/Figures		
Appendix B (g) (2) (C) (v)	The names and qualifications of the cultural resources specialists who contributed to and were responsible for literature searches, surveys, and preparation of the technical report.	5.7.9		

Adequacy Issue: Adequate ____ Inadequate ____ **DATA ADEQUACY WORKSHEET** Revision No. 0 Date ____

Technical Area: **Cultural Resources** Project: SES Solar One Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

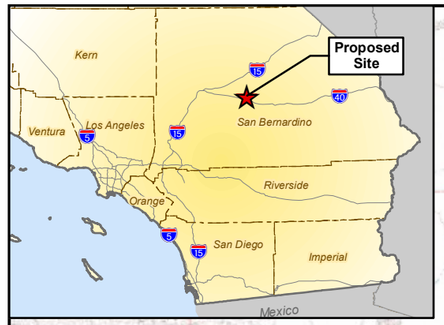
SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (g) (2) (D)	Provide a copy of your request to the Native American Heritage Commission (NAHC) for information on Native American sacred sites and lists of Native Americans interested in the project vicinity, and copies of any correspondence received from the NAHC. Notify the Native Americans on the NAHC list about the project, including a project description and map. Provide a copy of all correspondence sent to Native American individuals and groups listed by the NAHC and copies of all responses. Provide a written summary of any oral responses.	5.7.12 Confidential Appendix Z – Confidential Technical Report Appendix B		
Appendix B (g) (2) (E)	Include in the discussion of proposed mitigation measures required by subdivision (g)(1):	5.7.17		
Appendix B (g) (2) (E) (i)	A discussion of measures proposed to mitigate project impacts to known cultural resources;	5.7.17		
Appendix B (g) (2) (E) (ii)	A set of contingency measures proposed to mitigate potential impacts to previously unknown cultural resources and any unanticipated impacts to known cultural resources; and	5.7.17.5		
Appendix B (g) (2) (E) (iii)	Educational programs to enhance employee awareness during construction and operation to protect cultural resources.	5.7.17.5		
Appendix B (i) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed project, and a discussion of the applicability of, and conformance with each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed; and	5.7.18		

Adequacy Issue: Adequate ____ Inadequate ____ **DATA ADEQUACY WORKSHEET** Revision No. 0 Date ____

Technical Area: **Cultural Resources** Project: SES Solar One Technical Staff: ____

Project Manager: ____ Docket: ____ Technical Senior: ____

SITING REGULATIONS	INFORMATION	AFC PAGE NUMBER AND SECTION NUMBER	ADEQUATE YES OR NO	INFORMATION REQUIRED TO MAKE AFC CONFORM WITH REGULATIONS
Appendix B (i) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	8		
Appendix B (i) (2)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	8.1.4		
Appendix B (i) (3)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	5.7.18.1.5		



Solar 1 (Phase 1)

Solar 1 (Phase 2)

N.A.P.

Proposed Main Services Complex

Proposed Solar One Substation

Proposed Satellite Services Complex

Solar 1 (Phase 2)

N.A.P.

N.A.P.

Pisgah Substation

40

LEGEND

- Solar One APE Boundary
- N.A.P. (Not a Part)
- Proposed Transmission Line
- Proposed Construction Staging Area
- Permanent Access Road
- I-40 Temporary Construction Access Road
- 50-Ft Buffer of Access Road Outside of Solar One APE
- 200-Ft CEC Archaeological Buffer
- Half Mile Built Environment Buffer
- Proposed Water Well
- BNSF Railroad

SOURCES: ESRI;
Stantec Engineering (project site Oct. 2008);
TIGER (railroad 2000); ESRI (overview);
USGS 7.5' quads (Troy Lake, Hector,
Sleeping Beauty various dates);
URS (CR survey Aug-Oct. 2008, I-40 access rd).

TOPOGRAPHIC APE MAP
SOLAR ONE PROJECT

URS

2000 0 2000 4000 Feet

SCALE: 1" = 4000' (1:48,000)
SCALE CORRECT WHEN PRINTED AT 11X17

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